UCLA

GRADUATE CATALOG
1982–83



UNIVERSITY OF CALIFORNIA, LOS ANGELES JUNE 1982

UCLA

GRADUATE CATALOG
1982–83



UNIVERSITY OF CALIFORNIA, LOS ANGELES JUNE 1982 $3.00

Administrative Officers and Staff

Chancellor:
Charles E. Young, Ph.D.

Executive Vice Chancellor
William D. Schaefer, Ph.D.

Vice Chancellor—Graduate Programs and Dean of the Graduate Division:
Victoria A. Fromkin, Ph.D.

Deans Emeriti of the Graduate Division:
Vern O. Knudsen, Ph.D. (Deceased) (1934-1958)
Gustave O. Arlt, Ph.D. (1959-1962)
Horace W. Magoun, Ph.D. (1962-1972)
James E. Phillips, Ph.D. (Deceased) (1974-1979)

Associate Deans:
Thomas J. LaBelle, Ph.D.
David E. Lopez, Ph.D.

Ellen Benkin, Assistant Dean and Supervisor, Student and Academic Affairs .

Diane E. Brandt, Senior Editor, Graduate Division Publications

Marie Demir, Assistant to the Dean, Recruitment

Mabel O. Dempsey, Assistant to the Dean, Budget and Personnel

Mary E. Earl, Assistant Dean and Director, Fellowships and Assistantships

C. Sari Halasz, Director, Graduate Admissions

James Henson, Institutional Researcher, Office of Graduate Information Systems

Charles J. Johnson, Systems Analyst, Office of Graduate Information Systems

Helen Kaneko, Secretary to the Associate Dean

Hazel Love, Assistant Dean and Director, Graduate Affirmative Affairs Office

Carmen Taub, Secretary to the Associate Dean

Elizabeth Thoren, Assistant to the Dean

Ethel Toki, Systems Analyst, Office of Graduate Information Systems

Graduate Council:
Marcella (Hughes) Beeman, Coordinator and Assistant to the Chair

Graduate Students Association:
Scot Spicer, President

Jane Wishon, Vice President-Internal Affairs

Carla Mortensen, Vice President-External Affairs

UCLA (USPS 646-680)
Volume 22, Number 9 · June 15, 1982
A series of administrative publications of the University of California, 405 Hilgard Avenue, Los Angeles, California 90024. Second-class postage paid at Los Angeles, California. Fourteen a year — one issue in March, April, August and November. Two issues in May, July and September, and four issues in June.

Other Information . . .

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, Medicine, Nursing, Public Health, and Social Welfare; and in the announcement of the College of Fine Arts and the Undergraduate Catalog.

This book was produced by UCLA Publication Services Department.

Cover illustration by UCLA student, Masahiro Toriyama.

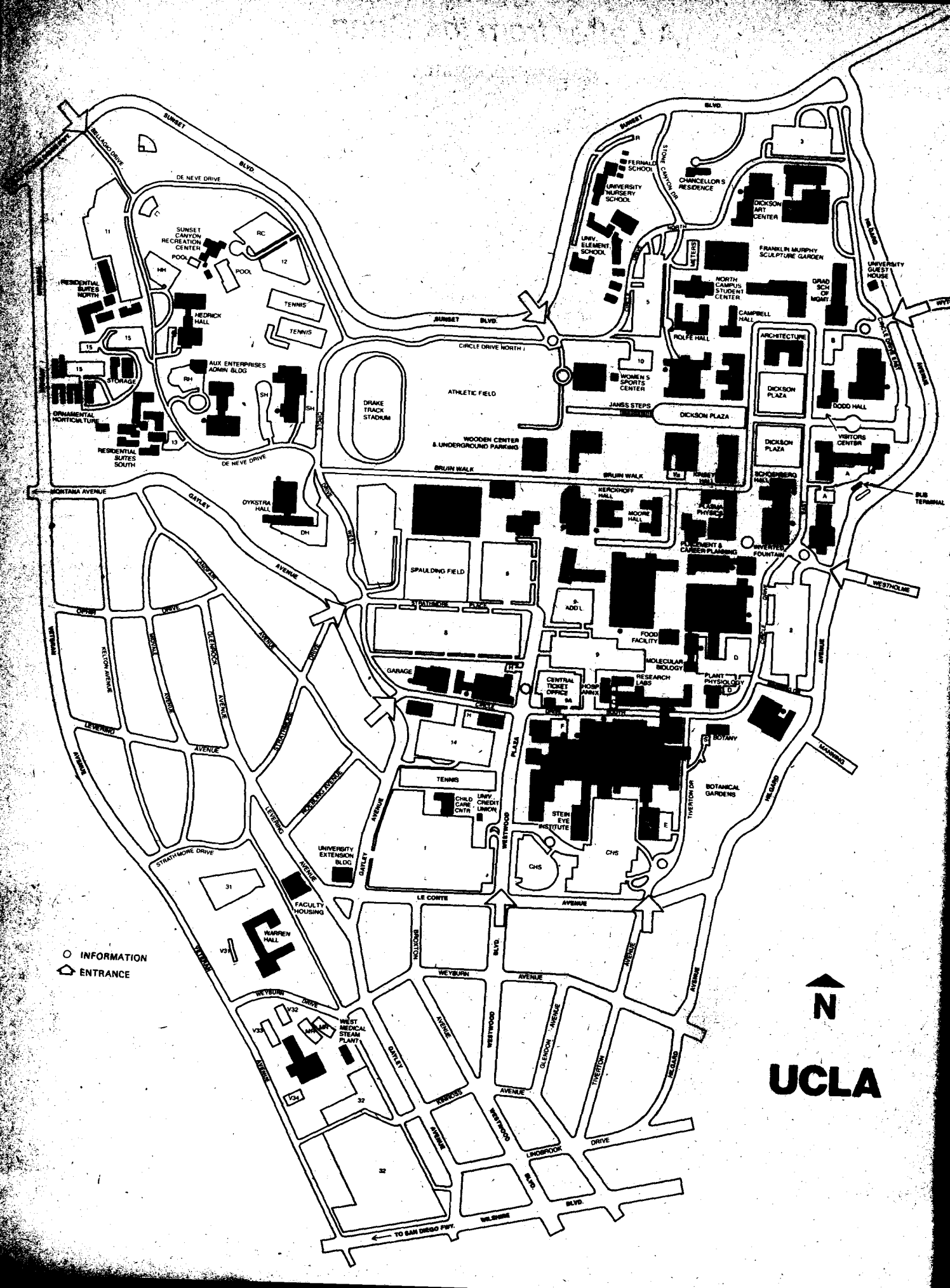
Please note

Every effort has been made to insure the accuracy of the information presented in the Graduate Catalog. However, all courses, course descriptions, instructor designations and curricular, degree requirements and fees described herein are subject to change or deletion without notice. You may consult the appropriate department, school, college, or division mentioned in the Catalog for further information.

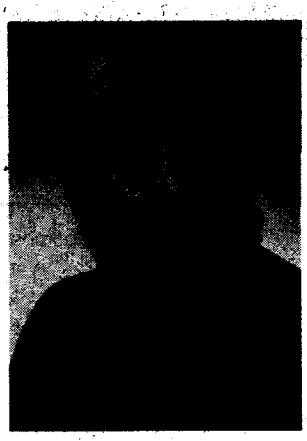
Contents

CAMPUS MAP iv
A LETTER FROM THE DEAN ... v
CALENDAR vi
INTRODUCTION 1
STUDENT LIFE AT UCLA 2
LIBRARIES, MUSEUMS, AND SPECIAL FACILITIES 7
RESEARCH FACILITIES AT UCLA 9
SPECIAL PROGRAMS AND TRAINING 14
ADMISSIONS 15
FINANCIAL ASSISTANCE 18
GENERAL INFORMATION AND REGULATIONS 20
DEGREES AND REQUIREMENTS 31
COURSES 44

African Area Studies (Interdepartmental) 44
Afro-American Studies 47
American Indian Studies 48
Anatomy 49
Anesthesiology (Nurse Anesthesia) 52
Anthropology 54
Applied Linguistics (Interdepartmental) 60
Archaeology (Interdepartmental) 62
Architecture and Urban Planning 65
Art 77
Asian American Studies (Interdepartmental) 83
Astronomy 84
Atmospheric Sciences 86
Biological Chemistry 88
Biology 91
Biomathematics 95
Chemistry (and Biochemistry) . 98
Classics 102
Comparative Literature (Interdepartmental) 105
Dance 109
Dentistry 110
Earth and Space Sciences (Geochemistry, Geology, and Geophysics and Space Physics) 111
Economics 117
Education 120
Engineering and Applied Science (and Computer Science) 130
English (and ESL) 146
Environmental Science and Engineering (Interdepartmental) 153
Folklore and Mythology (Interdepartmental) 155
French 157
Geography 160
Institute of Geophysics and Planetary Physics 163
Germanic Languages 164
History 169
Indo-European Studies (Interdepartmental) 175
Interdisciplinary Colloquia 176
Islamic Studies (Interdepartmental) 177
Italian 179
Kinesiology 182
Latin American Studies (Interdepartmental) 185
Law 189
Library and Information Science 190
Linguistics 196
Management 200
Mathematics 215
Medicine 220
Microbiology 220
Microbiology and Immunology 223
Molecular Biology (Interdepartmental) 226
Music 227
Near Eastern Languages and Cultures 233
Neuroscience (Interdepartmental) 237
Nursing 238
Oral Biology 243
Oriental Languages 245
Pathology (Experimental) 248
Pharmacology 249
Philosophy 251
Physics 254
Physiology 257
Political Science 260
Psychiatry and Biobehavioral Sciences 264
Psychology 270
Public Health 275
Radiological Sciences (Medical Physics) 291
Romance Linguistics and Literature (Interdepartmental) 293
Slavic Languages and Literatures 296
Social Welfare 300
Sociology 304
Spanish and Portuguese 309
Theater Arts 314
ADMINISTRATIVE OFFICERS . 322
INDEX 324


SUNSET BLVD.
BELLAGIO DRIVE
DE NEVE DRIVE
SUNSET CANYON RECREATION CENTER
POOL
RC
NH
RESIDENTIAL SUITES NORTH
HEDRICK HALL
TENNIS
AUX ENTERPRISES ADMIN BLDG
RH
SH
STORAGE
ORNAMENTAL HORTICULTURE
RESIDENTIAL SUITES SOUTH
DRAKE TRACK STADIUM
ATHLETIC FIELD
CIRCLE DRIVE NORTH
WOMEN'S SPORTS CENTER
JANSS STEPS
DICKSON PLAZA
WOODEN CENTER & UNDERGROUND PARKING
BRUIN WALK
FERNALD SCHOOL
UNIVERSITY NURSERY SCHOOL
UNIV. ELEMENT. SCHOOL
CHANCELLOR'S RESIDENCE
STONE CANYON DR
DICKSON ART CENTER
FRANKLIN MURPHY SCULPTURE GARDEN
NORTH CAMPUS STUDENT CENTER
GRAD SCH OF MGMT.
UNIVERSITY GUEST HOUSE
CAMPBELL HALL
ROLFE HALL
ARCHITECTURE
DICKSON PLAZA
DODD HALL
VISITORS CENTER
SCHOENBERG HALL
KERCKHOFF HALL
MOORE HALL
PLACEMENT & CAREER PLANNING
INVERTED FOUNTAIN
BUS TERMINAL
WESTHOLME
MONTANA AVENUE
GAYLEY AVENUE
DYKSTRA HALL
SPAULDING FIELD
ADD'L
FOOD FACILITY
MOLECULAR BIOLOGY RESEARCH LABS
PLANT PHYSIOLOGY
GARAGE
CENTRAL TICKET OFFICE
HOSP. ANNEX
BOYAR
BOTANICAL GARDENS
TENNIS
CHILD CARE CNTR
UNIV. CREDIT UNION
STEIN EYE INSTITUTE
CHS
UNIVERSITY EXTENSION BLDG
FACULTY HOUSING
WARREN HALL
LE CONTE AVENUE
STRATHMORE DRIVE
WESTWOOD PLAZA
WESTWOOD BLVD.
TIVERTON DR
HILGARD AVENUE
MANNING
LEVERING AVENUE
KELTON AVENUE
BROXTON AVENUE
OLEANDER AVENUE
WEYBURN AVENUE
WEYBURN DRIVE
WEST MEDICAL STEAM PLANT
KINROSS AVENUE
GLENDON AVENUE
LINDBROOK DRIVE
WILSHIRE BLVD.
TO SAN DIEGO FWY.
INFORMATION
ENTRANCE
N
UCLA

A Letter from the Dean



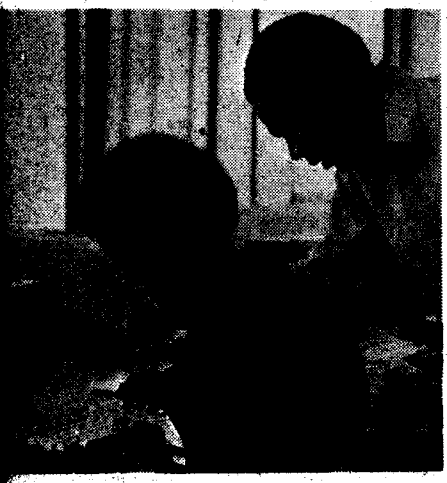
UCLA is a city within a city. It offers its graduate students a center for study just five miles from the Pacific Ocean and its expanse of beaches, and thirty minutes from downtown Los Angeles. You will read in the *Graduate Catalog* about our campus, our libraries, research centers, art museums, theaters, recreation centers, restaurants. You will also read of the medical complex, the professional schools, the diversity of fields of study offered here.

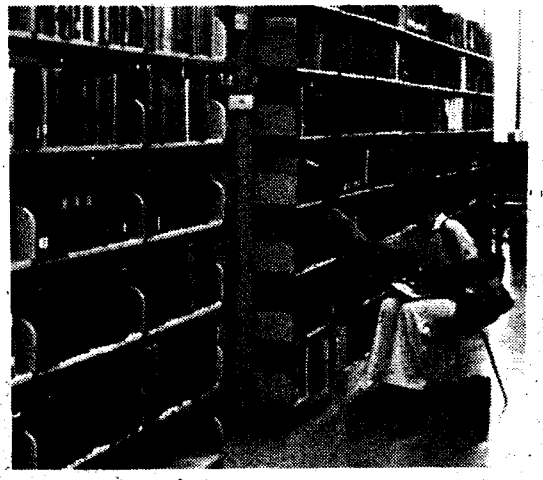
We have attempted to include in this catalog a wide range of information about UCLA. But, until you walk through the sculpture garden looking up at a Rodin or a Lachaise or a Lipchitz, or meditate in the serenity of the Japanese Gardens, or hear a noon concert at Schoenberg Hall, or move from the octagonal domes and Lombardian doorways reminiscent of 6th century Italian cathedrals in the North Campus, to the contemporary new buildings of the South Campus, UCLA will not yet be a part of your life. UCLA is a living, vital place, made so by our distinguished faculty and students. We welcome you as a new or continuing graduate student into our city; it is you for whom we exist.

Cordially,

Victoria A. Fromkin

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







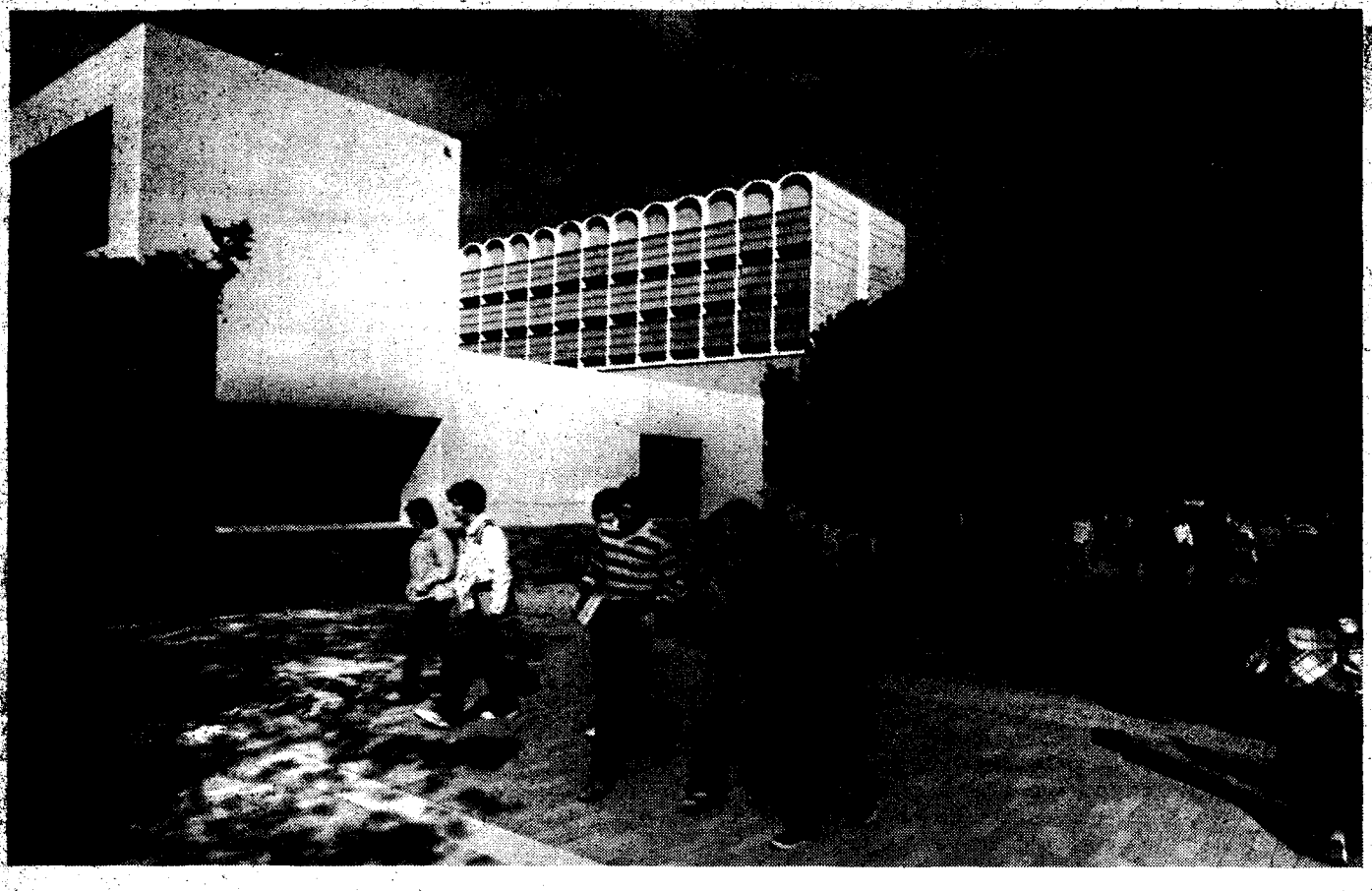
Calendar
1982-1983

	Fall '82	Winter '83	Spring '83
Last day to file* application for graduate admission or readmission or renewal of application (previously applied but did not register for a regular quarter) with complete credentials and the application fee, with Graduate Admissions, 1247 Murphy Hall.	December 30, '81	October 1, '82	December 30, '82
Last day to file graduate petitions for change of major with Graduate Division, 1225 Murphy Hall.	December 30, '81	October 1, '82	December 30, '82
First day to obtain UCLA Student Parking Request forms at Campus Parking Service.	May 3	not applicable	not applicable
Schedule of Classes goes on sale at Students' Store, Ackerman Union.	June 9	November 10	February 10
Last mailing date for ALL students to register/enroll by mail.	September 3	December 10	March 9
English as a Second Language Placement Examination (ESLPE) at 1:15 p.m. in 1200 Rolfe Hall.	September 21	January 4	March 29
QUARTER BEGINS	September 28	January 5	March 30
Registration in person without late fee, 8:30 a.m. to 5:00 p.m. For details, see *Schedule of Classes*.	September 28-October 1	January 5-7	March 30-April 1
INSTRUCTION BEGINS	October 4	January 10	April 4
Late registration in person with $50 late fee, 8:30 a.m. to 5:00 p.m.	October 4-15	January 10-21	April 4-15
Changes in study list without fee, file with major department by 4:00 p.m.	October 4-15	January 10-21	April 4-15
Graduate Study List Card should be filed with major department by 4:00 p.m.; approved cards due to Enrollment Office by 5:15 p.m.	October 6	January 12	April 6
Last day to file advancement to candidacy for master's degree with Graduate Division, 1225 Murphy Hall.	October 15	January 21	April 15
Last day to: 1. File Study List Card without fee. 2. Change Study List (add, drop) without fee. 3. Register in person with $50 late fee. 4. File Graduate Leave of Absence with Graduate Division (prorated refund).	October 15	January 21	April 15
Last day to register for foreign language examinations in French, German, Russian, and Spanish.	October 15	January 28	April 1
Last day to (with approval of Graduate Dean): 1. File Study List Card with $50 fee. 2. Add courses to offical study list and/or change unit credit with $3 petition fee.	October 22	January 28	April 2
Orientation meetings on format for master's theses and doctoral dissertations (See Manuscript Adviser, 134 Powell Library).	October 21-23	January 27-29	April 21-23
ETS foreign language examinations in French, German, Russian and Spanish.	October 23	February 5	April 9
Last day to submit drafts of dissertations to doctoral committees for degrees conferred in current quarter.	November 5	February 11	May 6
Last day to file removal of incomplete petition ($5 fee) with Registrar, Window "A", Murphy Hall.	November 12	February 18	May 13
Last day to submit final drafts of theses to master's committees for degrees to be conferred in current quarter.	November 19	February 25	May 20

	Fall '82	Winter '83	Spring '83
Last day to file completed copies of theses for the master's degree and dissertations for the doctor's degree to be conferred in current quarter with Graduate Division, 1225 Murphy Hall.	December 6	March 14	June 6
Last day for graduate students to drop courses from study list without penalty of Grade "F", and/or change grading basis, with $3 petition fee.	December 10	March 18	June 10
Last day to withdraw.	December 10	March 18	June 10
Instruction ends.	December 11	March 19	June 11
Final examinations.	December 13-17	March 21-25	June 13-17
Quarter ends.	December 17	March 25	June 17
Last day to file applications for financial support tenable at Los Angeles for the 1983-1984 academic year (date to be postmarked). Applications postmarked after the published deadlines will be considered only in accordance with the availability of remaining funds.	December 30	consult department	consult department
Academic and Administrative Holidays:	July 5 September 6 November 25-26 December 23-24 December 30-31	February 21 March 28	May 30
Commencement			June 19

*Combined Application for Graduate Admission/Fellowship and Financial Aid. Application date of March 15, Graduate School of Management, M.B.A. program. Departments with earlier application date, please consult Graduate Admissions.







UCLA

Introduction

History of Graduate Study at UCLA

In the 43 years since the award of its first Ph.D. degree, the advances in graduate training and research at UCLA have transformed a small branch of the University into a major institution of a system of higher education which now embraces nine campuses throughout the State.

First established in 1919, the Southern Branch of the University of California was officially renamed UCLA in 1927 and moved in 1929 to its present home on a 411-acre campus in Westwood, a suburb of metropolitan Los Angeles overlooking the Pacific. Graduate study was first authorized for the M.A. degree in 1933, with graduate enrollments limited to approximately 125 students. The M.A. was offered in 16 fields that first year, and UCLA's total student population was then 6,060. The Graduate Division was established in 1934, and in 1936 authorization for graduate education at UCLA was extended to the Ph.D. degree with four departments offering programs. In 1938, the first doctorate was awarded at UCLA, and graduate student enrollments had increased to 538 with the number of fields for the Ph.D. increasing to 21.

In Fall of 1981, total UCLA enrollments numbered 34,611. Of these, 8,197 students were enrolled in the Graduate Division, and an additional 3,806 in graduate professional programs in Dentistry, Law, and Medicine. During the year, 1980-81, 2,309 graduate degrees in a variety of fields were awarded to students enrolled in the Graduate Division.

Graduate Education: Nature and Objectives

Undergraduate study concerns itself primarily with the transmission of existing knowledge and concepts and is designed to provide a broad base in the arts and sciences and an understanding of contemporary society. Graduate study, on the other hand, is intended to deepen the student's grasp of a chosen field of knowledge, to introduce him/her to the tools and techniques of research and to develop his/her capacity eventually to make significant contributions to his/her field.

The first stage of graduate education leads to the degree of Master of Arts or of Science, or of one of several professional degrees (e.g., Master of Business Administration, Master of Education, etc.). The degree is intended to develop the mastery of a field and to prepare the student for school or college teaching or for practice of a profession.

The second stage leads to a doctoral degree (Ph.D., Ed.D., etc.) and is designed to prepare the student for creative activity and research, often in association with teaching at a university or college. Doctoral study requires rigorous intellectual discipline, meticulous scholarship, and full dedication to the field of study.

Like all distinguished universities, UCLA subscribes to the three chief hallmarks of graduate education: excellence in scholarship, creative productivity in research, style and skill in the transmission — both written and oral — of knowledge.

The Graduate Division

The Graduate Division has surveillance over students holding the bachelor's degree or its equivalent. It is also responsible for master's, doctoral, and certain graduate professional degrees and for scholars engaged in postdoctoral work.

The Graduate Division is headed by a Dean, who also serves as the Vice Chancellor — Graduate Programs, appointed by the Chancellor with the approval of the Regents. She is assisted by two Associate Deans and the Graduate Division staff in such matters as graduate fellowships, assistantships, recruitment, admissions, and all aspects of graduate student and academic affairs.

The Graduate Council

The Graduate Council is a standing committee of the faculty Academic Senate and is selected to give proper representation to the academic departments, colleges, professional schools, and interdepartmental programs which offer graduate curricula. The Council consists of 19 members, including the Dean of Graduate Division who serves *ex officio*. In addition, three student representatives are appointed to the Graduate Council by the Graduate Students Association.

The Graduate Council makes policy for all graduate education at UCLA, including the establishment, changes in, or discontinuation of degree programs and the periodic reviews of current graduate programs for their quality and appropriateness.

A Combined Effort

Together, the Graduate Division and the Graduate Council provide information to departments, establish graduate standards for the campus as a whole, approve admissions, programs, examinations, and degrees of graduate students, review graduate students' petitions, encourage and approve new academic programs, advise the Chancellor in matters concerning graduate study and support, promote graduate study on this campus, and protect the quality of graduate programs.



Student Life at UCLA

The Cultural Community

Public lectures, concerts, art exhibits, dance recitals, and the theater are an integral part of the University community. Professional artists of national and international fame, as well as distinguished guests in many fields, augment the year-round cultural life at UCLA. Outstanding student and professional productions and programs highlight the regular on-campus cultural calendar, providing opportunity to enjoy the best in art exhibits and lectures, plays, motion pictures, dance and music of all kinds — symphonic, operatic, choral, chamber — classical and contemporary as well as ethnic.

The Performing Arts

The UCLA Center for the Performing Arts presented a diverse array of new and legendary artists during its 1981-82 season. Renowned performers such as soprano Leontyne Price, flamenco guitarist Carlos Montoya, and mime Marcel Marceau, made rare West Coast appearances at Royce Hall. The art of the keyboard was explored by pianists Aldo Ciccolini, Claudio Arrau (performing with the Los Angeles Chamber Orchestra), and Philippe Entremont in concert with flutist Wolfgang Schulz. The Los Angeles Philharmonic crowned the fall music season at UCLA with a three-evening "Festival of Music Made in Los Angeles."

Pauley Pavilion was the scene of "A Gala Evening with Henry Mancini — A Tribute to the Man and His Music," honoring the composer for his extensive support of the performing arts at UCLA through his donations of scholarships, fellowships and original manuscripts to the Department of Music and its Library. Master of Ceremonies Andy Williams hosted a retrospective of Mancini's film scores performed by Quincy Jones, The New American Orchestra conducted by Jack Elliott, the UCLA Marching Band and the UCLA Jazz Band Sextet. The highlight of the evening was a recital of operatic arias and Mancini compositions by tenor Luciano Pavarotti. Chancellor Charles E. Young honored Mr. Mancini as the first recipient of The Distinguished Artist Circle Award. Mayor Tom Bradley also cited his contributions to Los Angeles' artistic and educational communities. Sponsored by The Royce Two-Seventy, the senior support group for UCLA's Council for the Performing Arts, this event was coordinated by 14 graduate and undergraduate students under the supervision of professional volunteers from the entertainment community, all proceeds to benefit the performing arts at UCLA.

UCLA offered a feast of dance, with performances by the Alvin Ailey American Dance Theater, Pilobolus, the Jazz Tap Ensemble, Les Ballets Trockadero de Monte Carlo and the Oakland Ballet, as well as the Lar Lubovitch, Dan Wagoner, Laura Dean, Robert Small, UCLA and Merce Cunningham dance companies.

Special events throughout the year included the U.S. debuts of both the Aboriginal Arts of Australia and the Court Dance Theater and Music from Okinawa. Residencies were presented by the Asian Performing Arts Summer Institute's living treasures of Japanese theater and by the Actors from the Royal Shakespeare Company. "Central Avenue Breakdown," two performances by the legends of the Los Angeles jazz scene at Royce Hall was recorded for broadcast by National Public Radio. Finally, the Mizoguchi Film Festival made rare footage by Japan's eminent director accessible to local film buffs.

As this sampling of established artists and young masters indicates, the UCLA Center for the Performing Arts honors its commitment to present the finest entertainment available across the spectrum from the commercial to the esoteric. Special student tickets and discounted faculty/staff tickets are available to these events.

Recreation

UCLA provides extensive recreation opportunities and facilities for swimming, organized competition, informal play, physical exercise, and skill development. Twenty-one tennis courts, five handball courts, and several sports fields are open daily. Pauley Pavilion seats 13,000 persons for athletic and cultural events. The club program offers involvement in more than 40 activities on- and off-campus. A varied intramural program serves student interest in sports competition. Non-credit classes are offered in aquatics, dance, art, outdoor studies, fitness, and sports.

Sunset Canyon Recreation Center

The Sunset Canyon Recreation Center is a recreational and cultural facility aesthetically designed to serve the University community. It is open all year, seven days a week, for formal and informal use on both an individual and a group basis. Located in the hills of the west campus adjacent to the residence halls, it features an Olympic-sized park pool, a family pool, picnic-barbecue areas, multipurpose play fields, and an outdoor amphitheater. Rooms are available for meetings, receptions, symposia, dances, luncheons and dinners. The Center sponsors programs of poetry readings, informal concerts, exhibitions and art classes for adults and children, as well as summer swim classes for children.

Graduate Students Association

The Graduate Students Association (GSA) is the sole, campuswide student organization established for the purpose of representing the interests of graduate students. Departmental representatives coupled with a campuswide Forum and an executive branch comprise GSA's representative network. The location of the GSA office is in 301 Kerckhoff Hall (phone (213) 206-8512).

The GSA is financed by mandatory student government fees paid by all graduate students. Departmental graduate student organizations receive *pro rata* funds from the GSA. Additional funds are available upon request from the GSA Cabinet. Early application for funds is advisable.

The GSA appoints representatives to the ASUCLA Board of Control, the Communications Board, University Policy Commission, Registration Fee Committee, Wooden Center Board of Governors, and various funding and planning committees as well as to committees of the Academic Senate and various administrative committees.

Graduate student activities vary widely from one department to another. Included in the range of activities are: participation on such key committees as admissions, fellowships, curriculum, and appeals; organizing symposia and publications; preparing guides to survival in graduate school; and sponsoring guest lectures, social events, and orientation sessions for new students.

Living Accommodations

Note: Rates and information are subject to change without notice.

Early application is important for students interested in University accommodations. For off-campus rentals, students should plan to arrive at UCLA at least 14 to 21 days prior to the date of registration to give themselves a fair chance in the competition for housing. Persons interested in temporary accommodations may obtain a list of hotels and motels by writing to the UCLA Housing Office, 78 Dodd Hall.

The Office of Residential Life

The Office of Residential Life advises student governments in University-owned residence halls and Married Student Housing and assists them in developing social, educational and recreational programs. A live-in staff of professional and student advisers in the residence halls help students become acquainted with the University, with the residence halls' environment and with each other. The staff enforces rules, counsels individuals on normal student problems and makes referrals to specialized services as needed.

University Residence Halls

Four 800-student, and one 335-student, on-campus, coed residence halls combine social, cultural and recreational opportunities with complete liv-

ing and dining facilities. Additional on-campus housing is available in the 708-bed Residential Suite Complex. Graduate students are housed in Hershey Hall (335 beds).

Graduate students must return the housing information request form from their admissions packet in order to obtain an application. Assignment procedures for housing are included with the application form.

The rate for room and board (19 meals per week) covers the Fall, Winter and Spring Quarters; but it does not include University academic holidays and the recesses between quarters. There is also a residence hall association fee to cover social events within the halls.

Married Student Housing

University-owned housing for married students, single parents, and their immediate families (spouse and children only) is provided at Married Student Housing. These units are located approximately five miles from campus near a direct city bus line. The buildings are two-storied and have unfurnished one, two, and three-bedroom apartments. Ample play area is provided for children in the apartment complex and in the nearby Mar Vista Playground. Rental rates for each year are published in June for the following year.

Information pertaining to rental rates, eligibility, and assignment procedures may be obtained from: Married Student Housing Office, 3240 Sawtelle Boulevard, Apt. #1, Los Angeles, CA 90066, (213) 391-0686. Applicants can anticipate an average wait of 12 to 24 months.

Cooperative Residences

Privately-owned and cooperative residence halls for men and women are located close to the campus. In these non-profit organizations governed by the members, students work from 4-5 hours a week as part-payment for room and board (14-20 meals per week). A small fee for social activities is usually required.

Membership is open to all students. To apply or to request further information, write directly to the cooperatives: The University Cooperative Housing Association (men and women), 500 Landfair Avenue, Los Angeles, CA 90024; YWCA (women), 574 Hilgard Avenue, Los Angeles, CA 90024; Stevens House (women), 638 Landfair Avenue, Los Angeles, CA 90024; Hillel House (Co-op), Westwood Bayit House, 619 Landfair Avenue, Los Angeles, CA 90024; Asher Foundation (men and women), 936 Hilgard Avenue, Los Angeles, CA 90024.

Off-Campus Housing

Many apartments and rooms in private homes are listed in the UCLA Housing Office. The University does not inspect these accommodations; listings simply provide basic information. The University requires that the landlord not engage in practices which are discriminatory, unhealthful, unsafe or unfair to the student. Landlords who do so and are reported are not included in future listings.

Rents vary from $100-$200 per month for rooms in private homes; $170-$350 per month for a bachelor; $250-$450 per month for a furnished single. One-bedroom apartments range from $325-$600 per month; two bedrooms range from $450-$1,000. Rental rates depend upon furnishings and distance from campus; utilities (except water) are usually not included.

Most married students live in apartments and rented houses in the area. Up-to-date listings are available in the UCLA Housing Office. Students should check listings in person since they change from day to day.

The UCLA Housing Office also provides area maps, bus schedules, and information to students regarding their rights and obligations as tenants, guides students in evaluating rental opportunities and leases, mediates landlord-tenant disputes, and refers students to other agencies when necessary.

University Apartments

Additional University-owned housing for single students is provided in three off-campus apartment complexes. Housing accommodations in all of these apartment complexes are available to both single graduate and undergraduate students. Students sharing all University-owned apartments must be of the same sex. The rental rates for each year are published in June for the following academic year.

The University Landfair Apartments are conveniently located within walking distance of campus. Furnished bachelors, singles and one-bedroom with den apartments are available. The bachelors accommodate one student, singles accommodate two, and one-bedroom with den apartments accommodate four.

The University Glenrock Apartments are located approximately four blocks from campus, also within walking distance. The two-three-storied buildings have furnished single, one-, two- and three-bedroom apartments available. Single and one-bedroom apartments accommodate two students, the two-bedrooms accommodate four, and the three-bedrooms accommodate five or six, depending upon size.

The University Venice-Barry Apartments are located 5-6 miles from campus. There is no direct city bus line from the apartments to campus so the University provides a shuttle bus to the campus during weekdays. The complex has 122 furnished units made up of executive suites and one-bedroom apartments accommodating three students and two-bedroom apartments accommodating four to five students.

All University-owned apartment complexes do not permit pets. For rental rates and assignment information, visit or write to the UCLA Housing Office, 78 Dodd Hall, Los Angeles, CA 90024, (213) 825-4491.

Child Care

Child Care Center

The Child Care Center provides part-time and full-time care, depending upon parents' needs, for children 2 months to 6 years. Fees range from $123-$292 per month depending on full or part-time care. Some grants are available for income-eligible families.

The Child Care Center is located in Parking Lot 1, behind the Credit Union and the BRI trailers at 10833 Le Conte. For information regarding fees call Child Care Services at (213) 825-5086.

Family Day Care

This care is provided in homes in the community which are licensed by Los Angeles County and participate in training and enrichment by the Child Care Services staff. Full and part-time care is available; fees and hours may be arranged with individual caregivers. For more information, telephone (213) 825-8474.

UCLA Parent Toddler Group

Located in the Married Student Housing complex 4 miles south of campus (3327 S. Sepulveda Blvd., telephone (213) 391-9155 or (213) 398-8739), a cooperative pre-school is open to all members of the UCLA community: full-time students, faculty and staff.

The program is designed to help toddlers aged 18 months to 3 years develop a sense of independence, self-worth and the ability to relate to other children and to adults outside their own families. Some structured activities which encourage mobility and dexterity are available, but the children are encouraged to make their own choices and decisions.

Tuition is on a sliding scale, according to parental income. Parents participating in this cooperative scheme are required to work at school one morning in every four that their child attends. The Parent Toddler Group operates mornings, Monday through Friday, 9:00 a.m. to 12:00 p.m.

University Parents Cooperative Nursery School

Located in the Married Student Housing complex 4 miles south of campus (3327 S. Sepulveda Blvd., telephone (213) 397-2735), the University Parents Cooperative Nursery School offers a warm, supportive, educational environment to children of the UCLA community. The school provides parents of varied cultural backgrounds the opportunity to gain insights and skills in the art of being a good parent. Care is provided for children ages 3-6 years. The hours are Monday through Friday, 9:00 a.m. to 12:00 p.m. and 12:00 p.m. to 3:45 p.m. with extended care available 3:45 p.m. to 5:30 p.m.

Transportation and Parking

There are several other means of personal transportation than the automobile for commuting to and from the campus. Alternatives such as carpooling, public transportation and bicycling are described in the brochure, *How to Get to UCLA Without Using Your Car,* distributed by the Transportation Services Administration. This brochure is available at Campus Parking Service, and includes bus route maps and a UCLA Ridesharing application.

UCLA Parking Permits

A limited number of parking permits are sold to students for Fall, Winter and Spring Quarters. Students who wish to obtain parking permits may obtain UCLA Student Parking Requests from the Campus Parking Service. Parking assignments will be based on the information on the completed Requests. Because of space limitations, all students who submit Student Parking Requests may not receive parking assignments. Parking permits assigned and purchased for the Fall Quarter may be renewed for the Winter and Spring Quarters without submitting a new Request. Students not assigned parking in any quarter, must reapply for subsequent quarters. New or reentering students for each quarter must file Requests. Permits are not renewable from Spring Quarter for the following Fall Quarter.

Deadlines for returning a completed UCLA Student Parking Request to the Campus Parking Service will be established for each quarter and are listed in each quarter's *Schedule of Classes.* Students with physical disabilities which preclude walking long distances may apply for parking permits through Student Health Service. Parking permits for Summer Quarter are available on a first-come, first-service basis from the Campus Parking Service. Parking Permits are not transferable and may be purchased only from the Campus Parking Service.

Students may obtain UCLA Student Parking Requests and instructions for filing, including current deadlines and fees, by either writing to the Campus Parking Service, 405 Hilgard Avenue, Los Angeles, CA 90024, or by calling (213) 825-9871.

The Escort Service —Campus Police

The Escort Service is provided for members of the UCLA community 365 days per year from dusk until 1:00 a.m. and during finals week until 2:00 a.m. Escorts are available to walk women students between campus locations and to and from campus and the immediate vicinity (dormitories, cooperative residences, apartments, sororities, and Westwood Village).

The escorts are specially trained UCLA students who are employed by the Department of Police/Community Safety. They can be identified by the blue shirts or jackets with "University Police" emblems which they are required to wear on duty. In addition to the distinctive shirts, escorts carry a Police Department I.D. Card and a police radio.

Persons wishing to request an escort should phone UCLA Police at 825-1493. To insure prompt service, women students are encouraged to phone 15 minutes before they will need an escort.

The Escort Service is provided free of charge and is funded through Registration Fees, ASUCLA Board of Control, and the Department of Police/Community Safey. For further information, contact the UCLA Police at 825-9800.

ASUCLA Services

The Associated Students UCLA (ASUCLA), under the control of the ASUCLA Board of Control, manages the Ackerman Union-Kerckhoff Hall complex. In these facilities, the campus community will find a complete student store, daily food service, places to relax, have meetings and engage in leisure activities. Among other services offered by ASUCLA for the campus' convenience are a check cashing service, travel service, print shop, and photographic center. Some of these services are described below.

Food Service

ASUCLA offers the campus many distinct food service facilities, each unique in its makeup and atmosphere.

The Treehouse is on the first floor of Ackerman Union in the heart of campus. This unit features the Butcher Block and the Salad Bowl which includes carved-to-order hot roast beef sandwiches, barbecued chicken and ribs, and make-your-own salads in addition to the customary cafeteria fare. One of the more recent additions is La Quicherie, serving daily baked quiche, fresh breads, and spinach salads with an array of garnishes. These areas combined with the traditional cafeteria entrees provide a wide variety of full meal options for breakfast, lunch and dinner. The Treehouse is open from 7:00 a.m. to 7:00 p.m. Monday through Thursday; and 7:00 a.m. to 5:00 p.m. on Friday.

Housed within the Treehouse is the **Sandwich Room**. This facility carries a variety of low-cost made-to-order sandwiches including Italian-style submarine sandwiches served hot or cold. The Sandwich Room is open from 8:00 a.m. to 4:00 p.m. Monday through Friday.

The Cooperage, ASUCLA's newest food service opened its doors in September, 1981. Located on the A-Level of Ackerman Union (where the old "Coop" was located), the Cooperage features an innovative menu, a warm atmosphere, a stage, a sound system for live entertainment and a large screen TV for major events. Fred's Green Grocer offers filled croissants and special salads, and Cooper's Grill provides a variety of burgers with fries and onion rings. Casa del Oso features an authentic Mexican food selection, and Two Bears from Italy serves fresh baked pizza with a selection of toppings. There are also plans to serve beer and wine in the near future. The Cooperage is open from 10:30 a.m. to 10:00 p.m. Monday through Thursday; 10:30 a.m. to 7:00 p.m. on Friday; 11:00 a.m. to 6:00 p.m. on Saturday; and Sunday, noon to 8:00 p.m.

The wood and brass decor of the **Kerckhoff Coffee House** creates an environment not found on most college campuses. Located on the second floor of Kerckhoff Hall, the Coffee House offers ice cream specialties, a variety of teas and coffees, plus an assortment of gourmet potages. Open during the week from 7:30 a.m. until 1:00 a.m. and weekends from 11:00 a.m, to 12:00 midnight, the Coffee House provides UCLA students with a relaxed atmosphere featuring live entertainment almost every evening.

The Campus Corner is located on Bruin Walk directly across from Kerckhoff Hall. The oldest of the ASUCLA Food Service facilities, the Campus Corner features pita bread pocket sandwiches, the traditional fare of hamburgers and hot dogs, and frozen yogurt with your favorite topping. The Campus Corner is open Monday through Thursday from 8:00 a.m. to 5:00 p.m., Friday from 8:00 a.m. to 4:00 p.m.

Located in the southern portion of campus, in the Court of Science, is the **Bombshelter Deli and Burger Bar.** This unit specializes in authentic delicatessen fare, and also offers falafels, hamburgers and hot dogs. A favorite luncheon spot, the Bombshelter features outdoor patio dining and is open through the week from 7:30 a.m. to 5:00 p.m., and on Saturdays from 10:00 a.m. to 3:00 p.m.

The largest ASUCLA Food Service is the **North Campus Student Center,** located between the Research Library and Campbell Hall. It is known for its wide variety of pasta specialties as well as its established reputation of serving fresh baked donuts, Pot Au Feu entrees, deli sandwiches, a full salad bar, and its grill. North Campus is open for breakfast, lunch and dinner Monday through Thursday from 7:30 a.m. to 11:00 p.m., Friday 7:30 a.m. to 8:00 p.m.; Saturday 10:00 a.m. to 6:00 p.m. and Sunday 11:00 a.m. to 9:00 p.m.

Potlatch, a lounge on the first floor of the Graduate School of Management (GSM 1323A), offers sandwiches, snacks and beverages. Hours are Monday through Thursday 8:00 a.m. to 9:00 p.m., Friday 8:00 a.m. to 2:00 p.m.

ASUCLA also provides a **Catering Service** within the Student Union complex ranging from waiter-served functions and buffets to coffee service. Arrangements can be made through the catering office located in 1311 Ackerman Union.

In addition, the ASUCLA Food Service furnishes concession service in season or during events at the Sunset Canyon Recreation Center, Pauley Pavilion, and Drake Stadium.

Students' Store

The ASUCLA Students' Store is actually a "mini department store" with three locations on campus: Ackerman Union, the Center for the Health Sciences, and the North Campus Student Center. The Students' Store offers a wide variety of textbooks, general books, school and art supplies, dental and medical supplies, electronics, sporting goods, "UCLA" merchandise (Bearwear), casual and fashion clothing, food, health aids, greeting cards, and Lecture Notes. The main store is located on B-level of Ackerman Union; telephone 825-7711. It is open Monday through Thursday 7:45 a.m. to 7:30 p.m., Friday 7:45 a.m. to 6:00 p.m., Saturday 10:00 a.m. to 5:00 p.m., and Sunday 12:00 noon to 5:00 p.m. during school session; and Monday through Friday 8:30 a.m. to 6:00 p.m., Saturday and Sunday 12:00 noon to 5:00 p.m. during school breaks.

Graphic Services

ASUCLA Graphic Services is the campus center for photographic, printing, typographical and other related services. It is located on the first floor lobby of Kerckhoff Hall. Services include Xerox and book copying, quick offset, custom printing, color Xerox, typesetting, color portraits, commercial photography, passport photographs, "Perma Plaques", film, darkroom supplies, and discount photofinishing. Hours are: Monday through Friday, 8:30 a.m. to 6:00 p.m.; Saturday, 10:00 a.m. to 3:00 p.m.; phone (213) 825-0611, Ext. 291.

Check Cashing

Students, staff and faculty with current UCLA identification may cash a personal check for up to $50 a day, with a 20-cent service charge for each check at the Service Center in 140 Kerckhoff Hall. Postdated checks may also be cashed for up to $50 with a 45-cent service charge. Any postdated check will be held up for two weeks before being sent to the bank. Only one postdated check per 2-week postdating period is allowed. Traveler's checks in amounts of up to $50 per day may be cashed with a 20-cent service charge. Check cashing hours are Monday through Friday, 9:00 a.m. to 4:00 p.m. Weekend check cashing is available Saturdays, 10:30 a.m. to 5:00 p.m. at the Main Cashier's Office, A-Level Ackerman Union. No postdated checks may be cashed during the weekend hours.

Money Orders

At Window 7 in 140 Kerckhoff Hall (Service Center), students may purchase money orders for up to $300, with the exception of those to the UC Regents which can be over this limit. There is a 50-cent service charge for each money order. Hours are: Monday through Friday, 8:30 a.m. to 4:30 p.m.

Post Office Boxes

These are available to students, staff and faculty in 140 Kerckhoff Hall for $6.00 per quarter for a small box or $8.00 per quarter for a large box. The Post Office Box Rental Window is open Monday through Friday, 8:30 a.m. to 4:30 p.m.

Meeting Rooms and Lounges

The following rooms are available for the use of the entire campus community: five meeting rooms, two large activity rooms, and the Grand Ballroom in Ackerman Union; three meeting rooms in Kerckhoff Hall; and two meeting rooms in the North Campus Student Center.

Public lounges include the Upstairs Lounge located on the third floor of Kerckhoff Hall; the Downstairs Lounge and the Alumni Lounge, on the second floor of Kerckhoff Hall; and a lounge in the North Campus Student Center.

Students may reserve space for a meeting in Ackerman Union or Kerckhoff Hall by visiting the Information Desk on the first floor of Ackerman Union or by phoning (213) 825-0611, and may reserve space at the North Campus Student Center by visiting the information area at North Campus or by phoning (213) 825-0611, Ext. 331.

Travel Service

The ASUCLA Travel Service is located on the A-Level lobby of Ackerman Union and provides a complete selection of scheduled air ticketing service, charter flights, student-oriented packages and tours, U.S. and European rail tickets, as well as other travel-related services. The Travel Service is open Monday through Friday, 8:30 a.m. to 6:00 p.m.; and Saturday, 10:00 a.m. to 2:00 p.m.; or phone (213) 825-9131.

Central Ticket Office

The Central Ticket Office serves the UCLA community through two locations — the Ticket Office in the James E. West Alumni Center (ground floor) and at the trailer at 650 Westwood Plaza (across from the Police Station).

Tickets for *all* UCLA events are sold at *either* location. In addition, the following special ticket services are provided at each location:

The James E. West Alumni Center location offers student tickets to athletic events at reduced prices. Tickets to off-campus events are also sold, through both the Ticketron system and the Mutual Ticket Agency. Bus tickets for RTD, bus tokens for the Santa Monica bus system, and special student discount tickets for local motion picture theaters are also available.

The 650 Westwood Plaza location offers student tickets for on-campus cultural events at reduced prices, subsidized by the Student Committee for the Arts. For all student tickets, students must present their Registration Card and Photo I.D. Card. There is a limit of two tickets per person. Watch the *Daily Bruin* ads for ticket sales dates.

Visitors Center

The Visitors Center, which is located in 100 Dodd Hall (phone: (213) 825-4338, domestic; 825-4467, foreign), has a reception area where visitors are met, welcomed, and assisted. Campus tours and appointments for both domestic and foreign visitors, including escorting and interpreting, are part of the services offered.

Personalized campus tours are arranged on special request for visitors and guests of University staff and faculty.

Literature and information on campus events, concerts, exhibits, lectures, and recreation areas are kept on hand in the Center.

Student Health Service

Benefits

Student Health Service benefits include: outpatient care for general, and some specialized medical and surgical conditions, gynecological and family-planning services; dental care; psychiatric counseling; laboratory, x-ray, and pharmacy services. Students may obtain services for general care by making an advance appointment (phone 825-2463) or by walking in without an appointment. Most benefits are provided without additional charge; service charges, when applicable, are moderate. Presently, there are charges for all prescription medications, dentistry, routine immunizations and physical examinations, orthopedic supplies, missed appointments, contraceptive medications and devices, and required health evaluations. The full costs of hospitalization, and of specialized diagnostic and clinical services, unavailable within Student Health and ordered in the UCLA Medical Center or other community outpatient facilities, are the student's responsibility.

Location and Hours

Student Health Service is located on the A-Floor of the Medical Center, Room A2-130, Center for Health Sciences. Office hours are: Monday through Friday, 8:00 a.m. (9:00 a.m. on Tuesdays) to 11:30 a.m. and 1:00 p.m. to 4:30 p.m.; emergencies only 11:30 a.m. to 12 noon and 4:30 p.m. to 5:00 p.m. A small satellite office, in Pauley Pavilion, is open from 1:30 p.m. to 6:00 p.m., Monday through Friday, mainly for sports injuries, but open to all students. Emergency care after-hours, on weekends and holidays is available in the UCLA Hospital Emergency Room, on a fee-for-service basis.

Eligibility

Graduate students paying full registration fees are eligible for all benefits of Student Health Service during each quarter for which they are enrolled. A UCLA registration card and photo I.D. must always be presented for service. Students who do not pay full registration fees may obtain benefits, upon written confirmation of student status, by electing either a fee-for-service plan or the SHS Optional Health Service Fee plan. The Optional Health Service fee must be paid to the Student Health Cashier at the beginning of each quarter. For additional eligibility information, phone 825-1655.

Hospitalization and Insurance

Necessary hospitalization may be arranged by Student Health Service, but the costs of inpatient hospital care at UCLA or at any hospital ARE NOT COVERED as a University benefit. Students are personally responsible for all such costs, and should be sure that they have adequate, health insurance. Foreign students are required by University policy to have health insurance as a condition of registration.

Students without adequate insurance coverage are encouraged to purchase the UCLA-sponsored Student Supplemental Health Insurance Plan which is available at the beginning of each quarter. Extended coverage, at additional cost, is available for dependents of insured students. For additional insurance information, phone 825-1856.

Requirements

All registering graduate students must complete and return the insurance application and waiver form, whether or not they are purchasing insurance. All new and re-entering students in the Graduate Schools of Dentistry, Education, Medicine, Nursing or Social Welfare must complete and return the health evaluation form provided to them. All foreign students, new and re-entering, must complete and return the health evaluation form, and must be cleared for adequacy of health insurance and the absence of active tuberculosis before completing registration.

Exclusions

No coverage is provided through Student Health Service nor through Student Insurance for cosmetic surgery, care of chronic diseases, or rehabilitation. Dependents of students, whether insured or not, are not eligible for care and treatment at the Student Health Service.

Further Information

Inquire at the Student Health Service directly, or by telephone — (213) 825-4073. Deaf and hard-of-hearing students may communicate with the Student Health Service via the UCLA Hospital Interpreter Translation Service at 825-7275, or the Office of Special Services at 206-6083.

Psychological and Counseling Services

The Psychological and Counseling Services includes two separate divisions — The Behavioral Division and The Counseling Division. They provide professional services focusing upon student development, and are for the voluntary use of any regularly enrolled student.

Behavioral Division

The Behavioral Division (4223 Math Science Building, 825-4207) offers counseling for students who want to increase their effectiveness in handling specific problems encountered in university life.

The staff is composed of professional psychologists. Both individual and group programs are offered. Students should call or come in to arrange an appointment or to receive further information. Evening hours can often be arranged.

Counseling Division

The Counseling Division (4223 Math Science Building, 825-0768) offers individual and group counseling for students who are experiencing any of the number of general concerns, dilemmas, crises or indecisions which are often encountered by students. Educational and career interest inventories can be taken upon request. Marital and premarital counseling, and counseling related to problems encountered in other forms of relationships, is also available.

The staff is composed of counseling psychologists and other professionals familiar with the needs and interests of college students. Students should call or come in to arrange an appointment (immediate appointments are possible, if indicated) or to receive further information. Evening hours can often be arranged.

Placement and Career Planning Center

The Placement and Career Planning Center offers career development and placement services to students of all disciplines and all degree and class levels. It is comprised of three functional divisions: Career Development, Student Employment, and Educational Career Services. Services are located in the Placement and Career Planning Center building and in two satellite locations: 1349 GSM, specializing in Management, and 5289 Boelter Hall, specializing in Engineering and the Physical Sciences.

Career Development

A staff of career counselors is available to assist in career exploration, choice, and the job search. The Career Resources Library furnishes information for planning further education and alternative careers. The Campus Interview Program provides convenient access for students to interview with employers and graduate school representatives. A more diverse array of job opportunities is posted for direct referral to the employer.

Student Employment

A job listing and referral system is provided for currently enrolled students and their spouses who are seeking part-time, temporary, or vacation employment. Career-related opportunities (including paid and non-paid internships) are available either through the listings or through personal search with the assistance of this unit.

Educational Career Services

Specialized information and counseling is available to assist students and alumni seeking positions in universities, colleges, community colleges, and secondary and elementary schools. Current listings of educational job opportunities, internships in educational institutions, and a professional file service are included.

Special Services and Veterans Affairs

The Office of Special Services, A-255 Murphy Hall, certifies the enrollment status of students who receive direct educational assistance benefits from the U.S. Veterans Administration and the Social Security Administration. The Office also issues fee deferments to students sponsored by the California Department of Rehabilitation and fee waivers to dependents of deceased or disabled California veterans as authorized by Education Code 10652. Physically disabled students may receive assistance through the Office in such areas as registration and enrollment, parking permits, readers for the blind, interpreters for the deaf, proctoring examinations, van service, and minor repairs to students' wheelchairs.

Office of International Students and Scholars

The Office of International Students and Scholars (formerly called the Foreign Student Office) exists for the purpose of assisting the 5,000 international students and scholars to achieve the objectives for which they came to UCLA. Its staff, including both professional and peer counselors, is uniquely attuned to the questions and concerns of persons from other cultures. Matters commonly brought to this office include financial issues, questions relating to the Immigration and Naturalization Service, offices and departments at UCLA and outside agencies including sponsors and consular offices, academic and career decisions, interpretation of the American educational system, and the nature of interpersonal relations in this country. In addition, the Office serves to bring together American and foreign students for the exchange of information, opinions and for a variety of cross-cultural experiences.

The Office works closely with the International Student Center, located adjacent to campus, which provides an informal gathering place where American and foreign students meet with the local community.

Libraries, Museums and Special Facilities

The University Library

Library facilities are crucial to excellence in graduate research. The University Library on the Los Angeles campus is the largest academic library in the Southwest and ranks 12th in the nation. It consists of the University Research Library, the College Library and a number of specialized subject libraries. Its collections contain more than 4 million volumes and extensive holdings of government publications, pamphlets, manuscripts, *maps, microtext editions, music scores, recordings, and slides.* The Library regularly receives about 55,000 serial publications.

The University Research Library, on the North Campus, is a modern six-story building designed primarily as a graduate research library serving the social sciences and humanities. This building houses nearly 2 million volumes of the Library's total collection. The University Research Library provides special study and research facilities, including facilities for reading microtext materials and for the use of typewriters. All students have access to the main book stacks in the Library.

The card catalog there lists all cataloged books in the Research Library, the College Library, other campus libraries, and the William Andrews Clark Memorial Library. Biweekly issues of the *Catalog Supplement* on microfiche list recent publications which have not yet been fully catalogued. Both it and the UCLA *Serials List,* also issued on microfiche; may be consulted at principal service points in campus libraries.

The College Library is located in the Lawrence Clark Powell Library Building and exhibits many interesting architectural details. An open-stacks collection of materials to support classroom instruction is maintained there. The College Library Audio/Visual Center contains a collection of plays, speeches, poetry, and satire and a selection of popular music on audio cassettes as well as video cassettes on such subjects as biology, chemistry, dance, drama, engineering, and kinesiology.

The Department of Special Collections, in the Research Library, contains rare books and pamphlets, manuscripts, the University Archives, early maps, and files of early California newspapers. Collections of rare materials are also in the Art Library (the Belt Library of Vinciana), the Biomedical Library (the Benjamin Collection of Medical History), and the Management Library (the Gross Collection of Business and Economic History); others are located in the Music Library and the Theater Arts Library.

The Public Affairs Service, in the Research Library, provides a coordinated service embracing collections of official publications of governments and international organizations and of other books and pamphlets in the social sciences. It is a depository for the official publications of the United States government, the State of California, California counties and cities, the United Nations and some of its specialized agencies, and a number of other international organizations. Also available are selected publications of the other states and possessions of the United States, publications of foreign governments, books and pamphlets on local government, and reference and pamphlet materials on industrial relations and social welfare. The Public Affairs Service provides access to research data which are available on computer tapes.

The Biomedical Library, in the Center for the Health Sciences, has collections in all of the health and life sciences. Materials for engineering, astronomy, meteorology, and mathematics are kept in the Engineering and Mathematical Sciences Library. Education, kinesiology, and psychology are principal subjects served by the Education and Psychology Library. Other libraries serving specific academic programs include Architecture and Urban Planning, Art, Chemistry, English, Geology-Geophysics, Law, Management, Maps, Music, Oriental Languages, Physics, Theater Arts, and the University Elementary School.

The resources of these libraries are available to all students and members of the faculty and staff of the University. A Library handbook, describing the organization and services of the University libraries and listing their schedules of hours, may be obtained in any of the campus libraries.

An on-line computer system featuring the use of bar-coded labels in books and on borrowers' cards is utilized at the Loan Desks of the University Research Library and the Biomedical Library in order to record loans. Student borrowers must have a bar-coded label affixed to the back of their Student Photo ID Card in order to borrow materials from these libraries. This may be done at the Loan Desks of the University Research Library, the Biomedical Library, or the Engineering and Mathematical Sciences Library.

The Photographic Services, in the Powell Library Building, offers complete documentary photographic service, where photostats, microfilms, slides, ozalid prints, and other photographic work are done. Self-service photo-copying machines for copying periodical articles and portions of books and other library materials are available in most library units on campus.

Supplementing the University Library is the William Andrews Clark Memorial Library of about 75,000 books, pamphlets, and manuscripts, featuring English culture of the 17th, 18th, and 19th centuries, and the history of Montana. Materials in the Library do not circulate. The Clark Library sponsors an annual program of summer postdoctoral fellowships. The areas of study are based on the particular strengths of the Library's holdings. Each year a Clark Library Fellowship is granted to a UCLA graduate student working toward a doctorate within one of the Library's fields of interest, and each year also an eminent scholar is brought to the Library as its Senior Research Fellow. A distinguished scholar is appointed each year to the Clark Library Professorship. This Library is not on the University campus, but is situated at 2520 Cimarron Street, at West Adams Boulevard.

The Clark Library is open Monday through Friday from 8 a.m. to 5 p.m. Leaflets describing the Clark Library are available at the Reference Desk in the Research Library, and information on University transportation to the Clark Library may also be obtained here.

Museums

The **Frederick S. Wight Art Gallery** is located in the Dickson Art Center at the north end of the campus. The permanent holdings include the Franklin D. Murphy Sculpture Garden, 66 sculptures from the 20th century including Arp, Calder, Lachaise, Lipchitz, Moore, Noguchi, Rodin and Smith.

Twelve exhibitions of painting, sculpture and drawings, architecture and design are presented annually in close conjunction with the UCLA Museum of Cultural History and the Grunwald Center for the Graphic Arts. One major exhibition yearly is sponsored by the UCLA Art Council, the supporting organization of the Gallery.

The Gallery has exhibitions of Kuna Women's Art; the Graphic Work of Henri Matisse (presented by the Grunwald Center for the Graphic Arts); Afro-American Arts from the Suriname Rain Forest (presented by the Museum of Cultural History); Realism and Expressionism in Berlin Art; Glass from the 6th Century, B.C. to the 19th Century A.D.; Collection of Hans Cohn; Lorser Feitelson and Helen Lundeberg: A Retrospective Exhibition (Annual UCLA Art Council Exhibition); Warrington/Colescott/A History of Printmaking; Edouard Vuillard/Drawings, 1885-1930; as well as undergraduate and graduate student exhibitions of the UCLA Department of Art. The Gallery is open Tuesday through Friday, 11:00 a.m.-5:00 p.m.; Saturday and Sunday, 1:00 p.m.-5:00 p.m.; closed Monday. There are daily tours at 1:00 p.m. and 2:00 p.m. and group tours by appointment (phone: (213) 825-3264).

Jack B. Carter, Acting Director

The Grunwald Center for the Graphic Arts which houses a distinguished collection of prints, drawings, and photographs, is maintained as a study and research center for the benefit of students, scholars, and collectors as well as the general public. The permanent holdings of the Center include significant examples from the 15th century to the present which were originally selected to complement courses given in the history and connoisseurship of the graphic arts. It is particularly noted for its collection of German expressionist prints formed by Fred Grunwald as well as for specialized collections in 19th and 20th century lithography (including the Tamarind archive), the history of ornament, Japanese

prints (including the Frank Lloyd Wright collection), and comprehensive holdings of Matisse, Picasso and Rouault. A major exhibition is organized each year accompanied by the publication of *Grunwald Center Studies*, a scholarly journal devoted to documenting the Center's holdings.

E. Maurice Bloch, Director

The Museum of Cultural History comprises growing collections of objects which represent a wide range of the material culture, and specifically of the arts, of peoples who lived until recently at, or beyond, the margins of the major Oriental and Occidental civilizations. These collections represent the arts and archaeology of Africa, Melanesia, the Americas, the Ancient Near East, the circum-Mediterranean cultures, the European, Neolithic and Bronze ages, and the folk arts of Latin America, Europe, and the Orient.

The Museum promotes the study of arts and artifacts as one of the most important avenues toward an understanding of man's cultures. As a resource for UCLA faculty, students, visiting scholars and the general public, the Museum offers assistance with instruction, research field work, exhibitions, and seminars, and sponsors exhibitions, lecture programs, symposia, and publications.

The Museum directs a satellite museum program which organizes and mounts exhibitions that are located throughout greater Los Angeles, and a pre-history program which is designed to make children familiar with museum objects in a classroom setting. Trained volunteers teach classes in prehistoric archaeology in the Los Angeles City School System. The Museum has an 1,800 square foot multi-purpose facility which is used primarily for exhibits directly related to teaching and research, a focus for classes, seminars, and lectures. Designed as a home for many University, Museum, and community activities, the gallery enhances the effectiveness of existing programs and gives impetus to further development. The exhibitions highlight various aspects of the Museum's collections.

Christopher B. Donnan, Director



Special Facilities

The UCLA Film Archives, located in 1438 Melnitz Hall, currently holds approximately 12,000 titles, making it the largest film center west of the Library of Congress.

Strongest in American sound cinema, the Archives' holdings are mainly in 35mm studio prints, making the collection excellent for detailed studies of all aspects of cinematic styles. Other areas of strength include animation, "B" westerns, "Exploitation" films and documentaries.

These films are regularly exhibited at UCLA. The Archives is open from 9:00 a.m. to 5:30 p.m., Tuesday through Friday. Viewing appointments can be made in person or by calling 206-8013.

The UCLA Radio Archives, located in 1438 Melnitz Hall, offers an opportunity to examine a form of mass media that dominated popular culture long before television. It contains more than 10,000 broadcasts from the early 1930's to the present.

The Archives' greatest strengths are in the areas of dramatic, comedy and variety programs. A significant collection of programs (1939-1955) donated by the Hallmark Company includes 700 broadcasts. Among the highlights of the personal collections are 700 Jack Benny programs. Other personal collections feature Dick Powell, Bing Crosby and other famous radio personalities. The Clete Roberts Collection joins other news and documentary material in giving the Radio Archives a wealth of radio history.

The Radio Archives is open from 9:00 a.m. to 5:30 p.m., Tuesday through Friday. The phone number is 825-7357.

Under the joint auspices of the Academy of Television Arts and Sciences (ATAS) and UCLA, the **ATAS-UCLA Television Archives** strives to make television programs accessible to the public and researchers. The kinescope, telefilm and video tape collection currently totals 20,000 titles, making the Archives the largest university collection in the United States.

The holdings include examples from all types of broadcasting but are particularly strong in dramatic and comedy-variety programming from 1947 to the present. Documentaries and public affairs programs are well represented also.

The ATAS-UCLA Television Archives is located in 1438 Melnitz Hall and is open from 9:00 a.m. to 5:30 p.m., Tuesday through Friday. Appointments can be made in person or by calling 206-8013.

The 8-acre **Mildred E. Mathias Botanical Gardens** contain a useful teaching and research collection of about 4,000 species of plants of the world. Included are a native section, desert garden, lath-house, and experimental field. Adjoining is the Plant Physiology Building, with glass houses and growth chambers. The Herbarium contains a teaching and research collection of about 250,000 specimens representative of the flora of the world, with special collections of the native flora and of ornamental species cultivated in Southern California.

Arthur Gibson, Director

The Office of Academic Computing (OAC) is responsible for all general-purpose computing activities on the UCLA campus. In support of instructional and research activities, OAC provides a broad range of computing services to the UCLA academic community and, through a nationwide computer network, to institutions throughout the United States. The principal computing resource is an IBM System/370, 3033 computer. The 3033 is available to all departments and schools within UCLA, and timesharing terminals and remote-job-entry stations are located throughout the campus.

Both interactive and batch methods are available for performing work on the 3033. Interactive terminal-oriented systems available are VS/APL (IBM's verson of A Programming Language), TSO (IBM's Time Sharing Option), and WYLBUR. The 3033 supports standard MVS batch services as well as a fast, student-oriented batch service (QUICKRUN). Turnaround for jobs run on the 3033 typically ranges from under a minute for student jobs to under an hour for jobs requiring extensive setup operations.

OAC will also be providing computing services on an IBM 4341 computer. Any member of the UCLA student body or faculty can individually establish an account for using the 4341. Other noteworthy equipment provided to OAC users is special equipment for graphics work: two

plotters (a CalComp 936 Drum Plotter and a Versatec 1200A Electrostatic Plotter), several Tektronix graphics display devices (models 4081, 4051, and 4013), and IBM 3279 color display terminals.

Computing activities are supported by an extensive library of application programs, consulting services, and reference documentation. The applications program library for the 3033 includes a wide range of statistical, engineering, and mathematical software. Several FORTRAN and PL/I compliers, as well as other esoteric computer languages, are also supported on the 3033. **W.B. Kehl, Director**

The **Division of Laboratory Animal Medicine** is the centralized animal resource facility responsible for the procurement, husbandry and general welfare of animals required for teaching and investigative services. The Division's veterinary and support staff administers the veterinary medical and husbandry programs throughout the campus. The Division's veterinary programs and physical facilities have been approved for full accreditation by the American Association for Accreditation of Laboratory Animal Care. **Jessie O. Washington, D.V.M. Director**

The University of California **Natural Land and Water Reserves System** offers 25 reserves statewide to be used for field studies in unspoiled natural sites and for protected scientific experiments. Graduate students at UCLA regularly use several of these for thesis and dissertation research, including the 14,000-acre Boyd Deep Canyon Desert Research Center and the 56,000-acre Santa Cruz Island Reserve, both of which have field stations. A complex of three Santa Monica Mountain Reserves administered by UCLA is close enough to the campus for easy daily access. **Clarence Hall, Jr., Campus Representative**

Zoological collections of the Department of Biology include a research collection of marine fishes, primarily from the eastern Pacific and the Gulf of California, and the Dickey Collection of birds and mammals, primarily from the western United States, western Mexico and Central America. The Department also maintains a more limited collection of amphibians, reptiles and fossil vertebrates. Through a cooperative arrangement, the large zoological collections of the Los Angeles County Museum, containing both fossil and recent specimens, are available for research by qualified students.

The Department also maintains an extensive collection of algae, and a smaller collection of fungi and bacteria (including photosynthetic bacteria). These collections, which are part of the culture facility, are available for both teaching and research.

UCLA is a member of the Organization for Tropical Studies, a consortium created to promote research and educational programs in the New World tropics. Fellowships are available for subsistence in field-oriented programs in Central America.

Other Programs and Training

A variety of other programs, projects, facilities and specialized research units are presently in operation at UCLA. Inquiries concerning these activities should be addressed to the Dean of the Graduate Division, 1237 Murphy Hall, University of California, Los Angeles, California 90024.

Research Facilities at UCLA

Recognizing the value of an interdisciplinary approach to the search for knowledge, the University maintains Regentally-designated organized research units and other research programs outside the usual departmental structure. An organized research unit consists of an interdepartmental group of faculty and students engaged in research with them. Such units aid research and may enhance the teaching of participating members of the faculty, but they do not offer regular academic curricula or confer degrees. They may provide research training to graduate students employed in research programs with faculty supervision. These units, along with more specialized activities in focal fields, provide significant support to the educational program and enhance the overall academic quality of the institution.

African Studies Center

The **African Studies Center** provides a framework for furthering teaching and research on Africa involving social sciences, education, linguistics, humanities, fine arts, law, the health sciences and the natural sciences. The Center participates in an interdisciplinary master's degree program in African Area Studies, an articulated degree program with the School of Public Health, and in an undergraduate program in conjunction with degrees in the social sciences or African languages. The Center has also become increasingly involved in special programs which entail the dissemination of knowledge about Africa to the larger community. Through its Fellowship Committee, the Center makes grants to assist UCLA and students in furthering their studies of Africa. It participates in administering the NDEA Title VI fellowship awards for the study of African languages, and offers a limited number of supplementary grants-in-aid to students both in master's and in doctoral programs whose focal point is Africa. The Center provides information to faculty and students on extramural sources of research support and employment opportunities which require knowledge of Africa. It also brings Africanists to the University for lectures or as Visiting Professors or Research Associates, and sponsors interdisciplinary colloquia focused on integrative and innovative themes. Other Center activities include the publication of quarterly journals, *African Arts*, UFAHAMU, a student journal, *Studies in African Linguistics*, and *The Journal of African Studies, African Law Studies, The African Studies Center Newsletter, Research In Progress*, as well as occasional papers and books based on the interdisciplinary colloquia. The Center also provides facilities for a student organization, the African Activist Association, which is active in sponsoring events that focus public attention on important aspects of African culture or politics. **Michael F. Lofchie, Director**

Institute of American Cultures

The **Institute of American Cultures** is charged with promoting and coordinating the activities of the four ethnic centers — the Center for Afro-American Studies, the American Indian Studies Center, the Asian American Studies Center, and the Chicano Studies Research Center. The Institute conducts no research itself, but fulfills its purpose by making research funds available to the ethnic centers and by encouraging and coordinating the efforts of the centers to recruit faculty and develop new instructional programs. The Institute is guided by an Executive Committee consisting of the four center directors, three faculty members (one of whom serves as the chair), and the Vice Chancellor-Research Programs (ex officio). The Director of the Institute is the Executive Vice Chancellor.

The **Center for Afro-American Studies** is an organized research unit established on the UCLA campus in 1969. Its basic mission is to encourage and support research that enhances the interpretation of the Afro-American experience. Pursuant to this objective, it provides faculty and graduate student research grants, sponsors in-house research projects, offers fellowship and scholarship awards, supports interdisciplinary symposia, encourages related curriculum development, and most important, relates these findings to the community at large via lectures, publica-

tions, and cultural programs. In addition, the Center participates with an interdepartmental degree committee responsible for administering an interdisciplinary master's degree program and an undergraduate program in Afro-American Studies. **Claudia Mitchell-Kernan, Director**

The American Indian Studies Center acts as an educational catalyst in a variety of ways. It encourages new programs of study, promotes faculty development and systematic research, and develops library materials and curricula related to American Indian studies. In addition, the Program is involved with cultural activities of the Indian community and sponsors lectures, symposia, conferences, and workshops relevant to American Indian development. Special emphasis is placed upon coordinating the educational needs of American Indian students with the University and the community. **Charlotte Heth, Director**

The Asian American Studies Center seeks to increase the knowledge and understanding of the experiences of Asian/Pacific peoples in America. It promotes the systematic development of material resources related to Asian American studies through an aggressive library acquisitions program, coordinated interdisciplinary research, and a broad publications program. Human resources are nurtured by vigorous curriculum development efforts, and courses have been designed with degree-granting programs at both the undergraduate and graduate levels. The Center supports and encourages promising graduate students and postdoctoral scholars to pursue their interests in this vital field of study, as well as sponsoring a variety of conferences, lectures, symposia, and cultural events. In addition, the Center supports a wide variety of projects designed to channel the resources of the University and the fruits of the Center's other areas of activity to Asian American communities.

Lucie Cheng Hirata, Director

The Chicano Studies Research Center is an organized research unit established at UCLA in 1969. Its main purpose is to facilitate interdisciplinary academic research related to the Chicano experience. Pursuant to this primary purpose, the Chicano Studies Research Center seeks the development of Chicano Studies as a unique and scholarly area of activity recognizing that the University and national development of Chicano Studies are interrelated. The objectives of the Chicano Studies Research Center are (1) to identify, explore and document original research on critical issues facing the Chicano community; (2) to' initiate and support faculty and student development in Chicano Studies; (3) to assist in, support and encourage the development of undergraduate and gradute curricula in Chicano Studies, emphasizing graduate curricula; (4) to facilitate public service by focusing the unique research, publications, and materials collection development resources of the University on the Chicano community; and (5) to support the creation and development of Chicano Studies at other institutions, and the organization of professional associations, conferences, and meetings devoted to Chicano Studies.

The range of Center activities has been varied and extensive. It has included promoting and sponsoring a research program for faculty, students and staff; meeting the research training needs of students; maintaining and expanding a nationally recognized Chicano Studies Research Library; disseminating research and other materials on the Chicano through the CSRC Publications Unit; faculty and student recruitment, support and development; supporting and developing Chicano Studies coursework, including the administration of a major in Chicano Studies; and providing a public service to communities.

Juan Gomez-Quiñones, Director

Institute of Archaeology

The Institute of Archaeology was established in the summer of 1973 for the purpose of developing and coordinating activities relating to archaeology. Its goal is to contribute to the ideal of a comprehensive interdisciplinary reconstruction of the human past, as evidenced especially from artifactual remains.

The Institute includes faculty members from 11 academic units at UCLA, as well as faculty from various other UC campuses. It provides an intellectual focus for all University of California archaeologists, facilitating the exchange of views on theoretical models and technical developments. It does so by sponsoring lectures, seminars, symposia and arranging for visiting faculty; it also helps support excavation programs of the individual archaeologists active on campus. Through the Archaeological Survey, the Institute serves the needs of California archaeology, especially in the Southern part of the state. Besides occasional publications, the Institute issues a yearly journal, a series of technical monographs and a series devoted to major archaeological reports and investigations. The Institute has recently expanded its laboratory facilities for the analysis of ceramics, bones, metals and other materials. These are largely operated by graduate students in archaeology. Its archives, such as those devoted to rock art and archaeological sites in Southern California, provide an important research resource for archaeologists, historians, folklorists, art historians and other interested scientists. Given the considerable amount of public interest in archaeology, the Institute promotes a variety of activities which serve a broadly based need in the off-campus community, such as an Extension curriculum in archaeology, field trips, public lectures and publications for the interested lay public. **Giorgio Buccellati, Director**

Laboratory of Biomedical and Environmental Sciences

The Laboratory of Biomedical and Environmental Sciences conducts research in the fields of biomolecular and cellular science, environmental biology, and nuclear medicine. It is funded through a contract with the Department of Energy (formerly ERDA and AEC). Research and training in nuclear medicine is conducted at the Center for Health Sciences. Most of the remaining program is conducted in Warren Hall, located on the West Medical Campus.

Warren Hall is well-equipped with modern research tools including a cobalt radiation source with an activity of 10,000 curies at the time of installation. The Laboratory also operates a biomedical cyclotron at the Center for Health Sciences which produces isotopes and is capable of activation procedures in support of its research programs. The Laboratory staff consists of about 160 scientists, technicians and supporting personnel representing many disciplines. Graduate student and postgraduate research programs are supervised by the staff in several fields.

O.R. Lunt, Director

Brain Research Institute

The Brain Research Institute provides an environment for research in the neurological and behavioral sciences for investigators particularly from the behavioral, health and life sciences fields but also from the physical sciences and engineering. Three principal goals of the Institute are: (1) to support and conduct research which contributes to an understanding of brain mechanisms and behavior; (2) to contribute to the training of predoctoral and postdoctoral students for professional careers in brain science; (3) to develop and dissiminate information about brain function in the interest of the social and scientific communities. Located in the Center for the Health Sciences, the Institute conducts programs which are largely interdisciplinary. General activities include attention to such broad fields of interest as neurobiology, neurophysiology, neurochemistry, neuroanatomy, neuropharmacology, neuroendocrinology, neuropsychiatry, biophysics and communications, neuroimmunology, behavior and neuropathology. **Carmine D. Clemente, Director**

Center for the Study of Comparative Folklore and Mythology

The Center for the Study of Comparative Folklore and Mythology is an interdisciplinary research facility that supports and coordinates the comparative study of folklore and mythology from throughout the world. Research facilities in the Center suite include the Wayland D. Hand Library of Folklore and Mythology, the Visual Media Archive, the Western Folklore Archive, the John Edwards Memorial Foundation, a recording studio and sound laboratory, and collections of field recordings, phonograph records, films, and slides. Center-sponsored research projects include such diverse subjects as the mythologies of the Indo-European peoples, American popular beliefs and superstitutions, American legends, Anglo-American ballads, Irish narrative songs, Chicano traditional arts and oral history. **Patrick K. Ford, Director**

The Crump Institute for Medical Engineering

The Institute joins medicine and certain aspects of engineering, especially chemical engineering and materials science. Its research interest include: 1) pharmacokinetics (the analysis and modeling of drug and hormone distribution, and metabolism), 2) design of optimal experimental strategies for identifying pharmacokinetic models, 3) design of new therapeutic systems for the controlled delivery of drugs, 4) physiological systems analysis by combined animal experimentation and computer simulation, 5) development of synthetic polymers with programmed surfaces (chemically coded) to provoke selective bonding to certain tissues, 6) analysis of transports of air and soil pollutants, with emphasis on risk assessment, 7) development of an extended statistical, irreversible thermodynamic approach to the understanding of complex systems, including nervous systems.

The Institute will ultimately occupy a new building being constructed for it in Fall 1986. At maturity, the Institute will have 15 faculty members, from engineering and medicine. The Crump Institute is housed in the Engineering building, 6417 Boelter Hall. **F. Eugene Yates, Director**

Dental Research Institute

The **Dental Research Institute,** located mainly on the seventh floor of the School of Dentistry, involves faculty, graduate and professional students engaging in original research in six program areas as follows: (1) Immunology/Immunogenetics; (2) Periodontal Disease; (3) Ultrastructure and Cell Biology; (4) Oral Neurology/Pain; (5) Craniofacial Biology, and (6) Biomaterials. M.S. and Ph.D. students are sponsored by individual Institute faculty members. An informational brochure outlining current studies of Institute members is available from the Office of the Director (CHS 43-180, Ext. 55478). **William H. Hildemann, Director**

The Institute of Geophysics and Planetary Physics

The **Institute of Geophysics and Planetary Physics** is engaged in interdisciplinary programs of studies of the interior of the earth, moon, and other planets, the fluid and gaseous parts of the planets, and interplanetary space. Major research programs being actively explored in the laboratories of the Institute include investigations into the configuration of the earth's magnetic field in space; the earth-sun interaction; structure and properties of the lunar surface and interior; meteorites; origin of the earth's magnetic field; the history of the solar system; astrophysical plasmas; high energy astrophysics; ocean-atmosphere interactions; seismology; earthquake control and prediction; internal structure of the earth; earth tides; continental drift and plate tectonics; properties of materials under high pressures and temperatures; mineral synthesis; radiocarbon archaeology; geochronology; glaciology; petrology and metamorphism; isotope geochemistry; origins of life; man's interaction with the environment.

The laboratory facilities of the Institute and its faculty are available to guide the dissertation research of students in the physical sciences, including the Departments of Earth and Space Sciences, Physics, Chemistry, Mathematics, Atmospheric Sciences, Astronomy, Engineering and Anthropology. **Leon Knopoff, Associate Director**

Gustave E. von Grunebaum Center for Near Eastern Studies

The **Gustave E. von Grunebaum Center for Near Eastern Studies** was established to promote individual and collaborative research and training in this area. The Center encourages the research of individual faculty members and collaborates in the solution of basic research problems which require institutional backing. The Center also sponsors lectures, seminars and conferences on various topics falling within the scope of Near Eastern studies, and actively promotes an extensive publication program. **Speros Vryonis, Jr., Director**

Institute of Industrial Relations

The **Institute of Industrial Relations,** authorized by the Legislature of the State of California in 1945, is concerned with three principal types of activity. The first is an interdisciplinary research and publishing program directed primarily toward the study of labor-management relations, wages and related problems, economic security programs, the labor market, occupational safety and health, the quality of working life, the status of disadvantaged groups in the work force, labor law, labor history, comparative studies, and employment problems. Research staff members of the Institute are usually drawn from the regular faculties of the Graduate School of Management, the Departments of Economics, History, Political Science, Psychology, and Sociology; and the School of Law. This program affords opportunities to graduate students specializing in personnel management and industrial relations to engage in investigative work under expert guidance. The second main activity consists of community and labor relations programs serving unions, management, the public, and other groups interested in industrial relations. The programs consist of public lectures, conferences, symposia and institutes of varying duration, and include a series of courses through University Extension leading to a Certificate in Industrial Relations. A third activity is the promotion of University teaching of personnel and industrial relations in the southern California area. The Institute sponsors an intercampus program involving the Management or Administration schools at UCLA, UC Irvine, and UC Riverside. Master's students in these schools may take coursework at any of the three campuses. The intercampus arrangement was established pursuant to a grant from the Systemwide intercampus activities fund.
Daniel J.B. Mitchell, Director

The Jerry Lewis Neuromuscular Research Center

The **Jerry Lewis Neuromuscular Research Center** is located in the northwest corner of the Center for Health Sciences (on Westwood Boulevard — phone (213) 825-3733) adjacent to the Reed Neurological Research Center, Brain Research Institute (BRI), and Neuropsychiatric Institute (NPI). It houses the research programs of members of several departments, with a common focus of interest in the physiology, anatomy and biochemistry of nerves and muscles and of pathological conditions affecting muscles. **Alan D. Grinnell, Director**

Jules Stein Eye Institute

The **Jules Stein Eye Institute** is a comprehensive facility located within the Center for the Health Sciences, devoted to research in the sciences related to vision, the care of patients with eye disease and the dissemination of knowledge in the broad field of ophthalmology. Incorporated in this structure are outpatient, inpatient and operating room facilities for the care of patients with ophthalmic disorders; areas for research in the sciences related to vision; and facilities for scientific reading, lectures and seminars. The Institute affords a unique opportunity for the training of students in the School of Medicine, residents and graduate physicians, as well as postgraduate and postdoctoral fellows in fields related to vision science. A close relationship with graduate and undergraduate research and teaching facilities at UCLA is maintained. **B.R. Straatsma, Director**

Latin American Center

The **Latin American Center** is an organized research unit providing support for the multidisciplinary study of Latin America. With over 90 affiliated faculty and visiting scholars, the Center is a major resource for individual and collaborative research activities in the social sciences, arts, humanities, and professions. Cooperation between the Center and seven colleges and professional schools of the University is facilitated by the Dean's Advisory Committees for Latin American Studies.

Designated as a "center of excellence" by the U.S. Department of Education, the NDEA Latin American Language and Area Studies Center at UCLA supports the interdisciplinary B.A. and M.A. degree programs in Latin American Studies and coordinates articulated graduate degree programs with the Schools of Public Health, Library and Information Science, Management, Education, Engineering and Applied Science, and Archi-

tecture and Urban Planning. NDEA Title VI fellowships, research assistantships, and grants-in-aid are available to students in the graduate degree programs.

The Center also sponsors an extensive program of lectures, films, colloquia, and other special events for the University and general public. Additional outreach activities include pre-collegiate curriculum development, special offerings through University Extension, programs for community college instructors, and participation in the Southern California Conference on International Studies.

The Center publishes a series of documentary and scholarly publications, among which are the *Statistical Abstract of Latin America,* the *Latin American Studies Series,* the *Reference Series,* the *Journal of Latin American Lore,*and the *Hispanic American Periodicals Index (HAPI).*

Ludwig Lauerhass, Jr., Executive Director

Center for Medieval and Renaissance Studies

The **Center for Medieval and Renaissance Studies** is an organized research unit of the University of California. The Center does not currently offer courses or degrees, but it contributes to the goals of the institution in various ways.

The Center seeks to encourage multi-disciplinary attitudes and skills as it promotes, among some 20 UCLA departments, the study of Western civilization between 300 and 1650 A.D., from the early Christian period through the time of Milton. Accordingly, the Center encompasses the arts and sciences, history and languages, and it embraces the Latin West, Byzantium, Islam, Judaism, the minor Christian communities, and the various Slavic communities, as well as the Germanic and Celtic worlds. The Center seeks to furnish opportunities, facilities, and assistance for individual research and interdepartmental exchanges; it appoints postdoctoral associates and visiting professors; it sponsors lectures and organizes coordinated cultural enterprises such as conferences and colloquia. Through books and television programs, it makes the findings of scholars available to both the academic community and the general public.

Of special interest to graduate students is the Center's program for training research assistants. Each year the Center offers several research assistantships on a competitive basis to graduate students from the United States and abroad who plan to work at UCLA toward the Ph.D. degree. Each assistant is assigned to one or more faculty members in his/her own or related field. For further information and application forms, please write to the Director of the Center for Medieval and Renaissance Studies, 1365 Bunche Hall, UCLA, 405 Hilgard Avenue, Los Angeles, California 90024. Note that admission to graduate status at UCLA is a separate procedure; details are available from the Dean of the Graduate Division.

Since 1973, the Center has sponsored the publication of *Comitatus,* an annual journal containing articles in the field of Medieval and Renaissance Studies by University of California graduate students. The editorial board is composed entirely of students, with a faculty advisory committee.

Additionally, the Center houses a Graduate Student Organization (GSO). The GSO meets informally during the academic year to exchange information and distribute material; it publishes a quarterly newsletter and arranges colloquia.

Students working in Medieval and Renaissance fields enjoy excellent resources at UCLA. Among the major research tools available on campus are the Berenson photographic file and the Princeton Index of Christian Art, the Belt Library of Vinciana, the Biomedical Library's collections in the history of medicine, and the manuscript holdings in the Music Department and in the Research Library's Special Collections. As of 1979, UCLA was estimated to have more than 390,000 volumes in the fields of special interest to the Center, supplemented by growing collections in Judaica and Near Eastern Studies. Nearby are the manuscripts and printed riches of the Huntington and Clark Libraries. **Fredi Chiappelli, Director**

Mental Retardation Research Center

The **Mental Retardation Research Center** provides laboratories and clinical facilities for basic and applied research and research training in mental retardation and related aspects of human development. Its interdisciplinary activities range from molecular biology to epidemiology. The Center is closely allied with a Professional Education and Clinical Services Facility, which promulgates interdisciplinary training in the evaluation and treatment of mentally retarded and otherwise disturbed children and their families. Together, these two units comprise a total program directed toward a major public health program.

Nathaniel A. Buchwald, Director

Molecular Biology Institute

The **Molecular Biology Institute** was established to serve various interested departments of the biological, medical, and physical sciences in the coordination, support, and enhancement of research and training in molecular biology. Interests and activities of the Institute encompass all approaches which aim to explain biology at a molecular level, with particular emphasis on correlation of structure and function. These include study of structure and function of macromolecules, molecular genetics and virology; bioenergetics, catalysis and control; molecular basis of cellular architecture, development, evolution, neurobiology and oncology. Staff members from departments in biological, physical, and medical sciences participate in Institute programs, and the Institute aids departments in graduate training and postdoctoral programs in the general area of molecular biology.

Most of the Institute staff are housed in the Molecular Biology Institute building completed in 1976. Approximately one-half of the building space is devoted to the Parvin Cancer Research Laboratories. The Institute building is located adjacent to the Chemistry, Biology and Bacteriology Departments and close to the School of Medicine.

Paul D. Boyer, Director

National Center for Intermedia Transport Research (NCITR)

A **National Center for Intermedia Transport Research (NCITR)** has been established at UCLA with the support of the U.S. Environmental Protection Agency (EPA). At the Center, studies will be conducted of the transport of particles and gases across interfaces and of chemical conversion processes involving particulate matter at interfaces. Of special interest will be the transport of chemical species such as trace metals and organic compounds of pollution concern. The Center will emphasize the fundamentals of these processes. At the same time, however, the Center will apply the results of these and other studies to systems of practical interest such as emissions from the new synthetic fuel technologies and the chemical and petrochemical industry. For this purpose, theoretical and modeling approaches will be employed in the evaluation of field and monitoring data collected by EPA and others.

Participants in the Center include faculty and students from the Departments of Chemical Engineering and Atmospheric Sciences, and the Institute of Geophysics and Planetary Physics. Professor S.K. Friedlander, Vice Chair, Chemical Engineering, serves as Center Director and Professor Hans. R. Pruppacher, Chair, Atmospheric Sciences, as Associate Director. **S.K. Friedlander, Director**

Neuropsychiatric Institute (NPI)

The **Neuropsychiatric Institute (NPI),** in the UCLA Center for the Health Sciences, is an organized activity of the University of California devoted to education, research, and patient care in psychiatry, neurology, and related fields. The mission of the Institute is threefold: (1) acquiring new knowledge about the factors affecting social, psychological, intellectual and neurological health; (2) training professionals in mental health, mental retardation, and diseases of the nervous system within an interdisciplinary setting; and (3) developing and utilizing the most effective techniques of diagnosing and treating these disorders.

Louis Jolyon West, M.D., Director

Center for Russian and East European Studies

The Center for Russian and East European Studies was established to promote, assist and coordinate research and teaching on Russia and the countries of Eastern Europe. It furthers the research of individual faculty members and graduate students, sponsors colloquia, seminars and lectures, organizes conferences, and participates, with other universities, in academic exchange programs with Russia and Eastern Europe.

Barisa Krekić, Director

Institute for Social Science Research (ISSR)

The Institute for Social Science Research (ISSR) undertakes basic and policy studies on a broad spectrum of contemporary sociological, psychological, political and economic problems and other social-related community issues. The Institute encourages collaborative research between faculty in the various social science departments as well as cooperative projects that involve members of the professional schools. The core staff of the Institute provides research consultation and supportive services to University faculty members engaged in research investigations as well as advice on the designing and funding of projects. From time to time, the Institute offers special opportunities for graduate students to gain research experience. As funds permit, the Institute provides seed-funding for project development and pilot studies.

An integral part of the Institute is the **Survey Research Center (SRC)** which not only serves the UCLA faculty but investigators from other universities and research groups in the local and national social research community.

The current research program includes studies in medical care, mental health, human development, housing, law, demography, economic resources, gerontology, energy and economic behavior.

Director to be announced.

Western Management Science Institute

The Western Management Science Institute fosters research and advanced study in management science and operations research, with special emphasis on developments needed for more effective practical applications. The Institute conducts mathematical and computer-oriented studies on a variety of subjects. These include the construction of optimization models for production and distribution systems, finance and marketing policies, conservation of natural resources, and resource allocation in organizations. Appropriate tools of decision analysis, mathematical programming, microeconomics, simulation, and stochastic modeling are being developed and applied.

In addition to its research programs, the Institute is engaged in developing faculty resources and graduate curricula in the management sciences, and in sponsoring workshops and seminars such as the Jacob Marschak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences.

Although composed largely of faculty members of the Department of Management, the Institute staff is interdisciplinary. Fruitful collaborative relationships have occurred with the Departments of Economics, Engineering, Mathematics, Political Science, and Psychology.

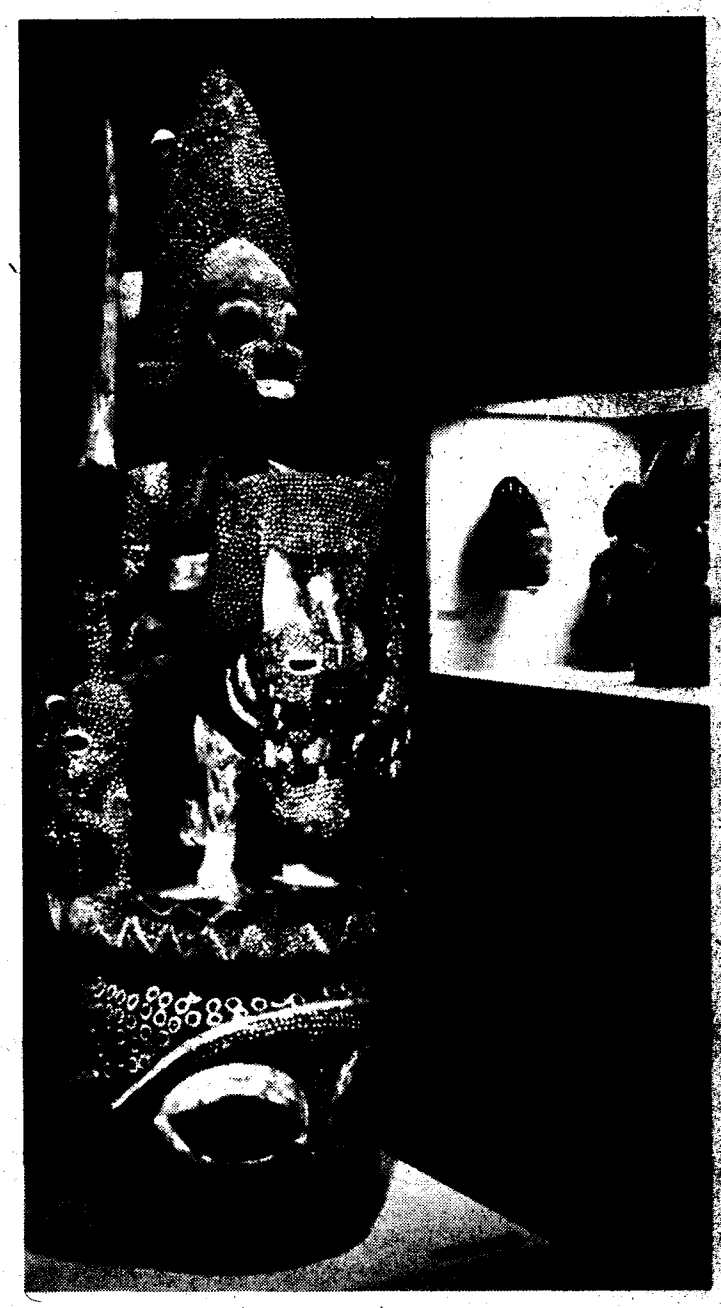
J.C. LaForce, Director

White Mountain Research Station

The White Mountain Research Station, a Systemwide organized research unit of the University of California, was established (1) to provide laboratory facilities for any qualified research investigator who wishes to utilize a high-mountain environment in his/her work; and (2) to serve as a teaching facility for field courses conducted in the region. Located in the vicinity of Bishop, California, the Station includes four separate laboratory sites: (1) the Owens Valley Laboratory, 3 miles east of Bishop at an elevation of 4,050 feet above sea level; (2) the Crooked Creek Laboratory on the White Mountain Range northeast of Bishop at an elevation of 10,150 feet, used in conjunction with the U.S. Forest Service; (3) the Barcroft Laboratory at an elevation of 12,470 feet; and (4) the Summit Laboratory atop White Mountain Peak at an elevation of 14,250 feet. The three laboratories above 10,000 feet are within the Inyo National Forest, and their operation is subject to the regulations of the U.S. Forest Service, as well as to those of the University of California. General operational policy for the Station is set by the President's Advisory Committee for the White Mountain Research Station (WMRS), which includes faculty representatives from every campus of the University.

In the more than 25 years of its existence, several hundred scientists have used the laboratories to conduct research in the agricultural, biological, and physical sciences, and have come to the Station from universities and colleges, government laboratories, and industrial research laboratories located both in this country and abroad. The facilities also have been used by several hundred undergraduate students enrolled in field courses conducted at the WMRS by a number of academic institutions. Primary emphasis of the Station is high altitude research. The administrative offices of the WMRS are located at UCLA in 3805 Geology Building (phone: (213) 825-2093).

Clarence A. Hall, Jr., Director



Special Programs and Training

Certificate Programs

UCLA offers graduate programs leading to the following certificates: Certificate of Specialization in Architecture/Urban design (School of Architecture and Urban Planning), Certificate of Specialization in Engineering and Applied Science (School of Engineering and Applied Science), Certificate in the Teaching of English as a Second Language (Department of English), Certificate of Specialization in Library and Information Science (Graduate School of Library and Information Science), Certificate of Postgraduate Medical Study, for interns and residents (School of Medicine), postgraduate certificate programs in Dentistry (School of Dentistry), teaching and other advanced credentials for public school service (Graduate School of Education). Further information can be obtained from the Dean of the appropriate school or the departmental Graduate Adviser.

Defense Language Institute — Presidio of Monterey

University of California graduate students (who are currently enrolled and have completed one quarter of graduate work) and faculty have a unique opportunity to acquire fluency in one of 34 foreign languages taught at the U.S. Defense Language Institute, Presidio of Monterey.

Each year 80 persons certified by the University of California Language Training Advisory Committee may be admitted.

Regulations and procedures for applicants, and application forms, may be obtained from the Fellowship and Assistantship Section, Graduate Division. For further information, write to the Administrative Assistant, University of California Language Training Advisory Committee, Cowell College, University of California, Santa Cruz, California 95064, or call UC Santa Cruz extension 2054 (message center 2609).

Departmental Scholar Program

Departments may nominate exceptionally promising undergraduate students (juniors and seniors) as Departmental Scholars to pursue bachelor's and master's degree programs simultaneously.

Qualifications include the completion of 24 courses (96 quarter units) at UCLA, or the equivalent at a similar institution, the requirements in preparation for the major, and eligibility for participation in the honors program in the college or school in which the student is resident. To obtain both the bachelor's and master's degrees the Departmental Scholar must be provisionally admitted to the Graduate Division. He/she will fulfill requirements for each program and maintain a minimum average of B. No course may be used to fulfill requirements for both degrees.

The Department Chair submits the student's nomination to the dean of the undergraduate college for recommendation to the Dean of the Graduate Division, on or before the application dates for admission to graduate standing (see Calendar, page v). Interested students should consult their departments well in advance of these dates for admission to graduate standing.

Under provisional admission to the Graduate Division, Departmental Scholars are accorded the usual privileges of graduate students with the exception of leaves of absence and participation in the Intercampus Exchange Program.

Education Abroad Program

Graduate students may, with the approval of the departmental Graduate Adviser and the Dean of the Graduate Division, participate in the Education Abroad Program at the University's study centers overseas. Such students remain under the academic direction of their home campus departmental Graduate Adviser but may seek assistance from the Director of the Study Center when appropriate. Participation in the Education Abroad Program may prove especially valuable to doctoral candidates who have been advanced to candidacy and are engaged in independent study and research directed toward their dissertations. By approval of the Graduate Council, courses (units) to be applied toward an advanced degree shall be accepted only under all of the following conditions: a) students, after returning, must present a transcript (or equivalent) showing work done abroad under the Education Abroad Program; b) the major department indicates its approval of those courses which it recommends for credit toward an advanced degree; c) the recommendations of the department are then submitted to the Dean of the Graduate Division for approval. For further information, graduate students should consult the Education Abroad Office, 2221-B Bunche Hall, 825-4889, where applications may be obtained. A graduate student is eligible to participate after completion of one full academic year of study at a UC campus. Applications should be filed with that office well in advance of the planned period of study.

The Graduate Cross-Enrollment Program

As an integral part of a Regentally-approved program in Academic Resource Sharing, which links UCLA with USC, the Graduate Cross-Enrollment Program makes possible graduate student exchanges in many departments. The program is limited to specialized course offerings which would not otherwise be available to UCLA students.

With the approval of the instructor and Department Chair on the host campus, the UCLA student signs up for a 501 course wih his/her UCLA adviser and completes The College and University Regional Student Exchange Petition for Enrollment and Certification of Grade. The completed form must be filed with the Graduate Dean's Office on the host campus by the third week of the UCLA quarter in which 501 credit is requested. Upon completion of the period of study at the host institution, the student will be evaluated by the instructor on that campus, who will forward the grade (S or U) to the UCLA Graduate Adviser, to be recorded against the 501 course and submitted to the UCLA Registrar. There is a credit limit of 8 units of such courses applicable toward the requirements for the master's degree. These 8 units cannot be used to satisfy the 5-graduate-course requirement.

The UCLA student must have completed at least a year of graduate study here, must make petition for study at the host campus in the manner detailed above, and must have registered and paid his/her other fees to UCLA before permission to cross-enroll will be granted. Library privileges will be extended at the host institution, but other privileges or services cannot be proffered.

Limited programs in specialized language courses and in special education with the State University and College System are also available through the College of Letters and Science or the Graduate School of Education.

Intercampus Exchange Program

The Intercampus Exchange Program makes resources of all campuses of the University of California available to graduate students in good standing who have completed at least one quarter of graduate study in the University. It is reserved for use by those students whose graduate study may be enhanced by work with distinguished faculty or use of facilities and resources accessible only on another campus. Applications must be approved by the graduate Department Chair in the student's home department and by the Department Chair in the department (or departments) in which he/she expects to work on the host campus, as well as by the Deans of the Graduate Divisions on both campuses. The student will register, pay fees, and earn credit toward academic residence requirements on his/her home campus, but the host campus will provide library, student health service, and other privileges. Course grades will be transferred to the home campus.

Application forms for the Intercampus Exchange Program are obtained from the Graduate Division on the student's home campus and should be filed at least four weeks before the beginning of the quarter in which the student expects to enter this program. UCLA graduate students may obtain application forms from the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall, 825-4226.

It is the responsibility of the Intercampus Exchange Student to make sure that he/she is registered on both his/her home and host campuses. Information regarding UCLA registration may be obtained from the Registration Clerk, Room 1134, Murphy Hall, 825-1092.

Students for whom UCLA is the host campus will be sent an Appointment to Register in Person upon receipt of the approved quarterly application. With presentation of the current validated home campus registration card to the Registration Clerk, 1134 Murphy Hall, the student will be registered as a UCLA student.

Students for whom UCLA is the home campus and who are studying outside the Los Angeles area an Intercampus Exchange participant may request that the registration packet for the following quarter be mailed to them. These requests may be in writing, addressed to the Registration Clerk, 1134 Murphy Hall, and should be sent no later than six weeks prior to the opening date of the specified quarter. This will ensure that the IEX participant will be able to meet the established deadlines for registration by mail.

Postdoctoral Scholars

Opportunities and facilities of the University are made available to qualified scholars holding doctoral degrees, or their foreign equivalents, who wish to engage in further supervised advanced study and research under faculty guidance, not leading to any degree. Postdoctoral Scholar Status is limited to a maximum of three years. The date the individual's doctorate is awarded determines the maximum length of enrollment. Scholars have to enroll within three years of the receipt of their qualifying degrees in order to be eligible for the 3-year maximum. Individuals may enroll for lesser periods, provided their degrees were awarded before a 6-year time period has elapsed from the receipt of their degrees. The qualifying doctorate is a Ph.D. or its foreign equivalent, or in the case of a professional degree, after completion of postdoctoral clinical residency training.

An interested person should first contact the department or research unit with which he/she would like to become associated. After informal acceptance by the department, all Postdoctoral Scholars must enroll through the Fellowship and Assistantship Section of the Graduate Division. Upon written request from the Scholar's faculty supervisor and recommendation by the Department Chair or Unit Head, a Certificate of Postdoctoral Study is issued to the Scholar to confirm satisfactory completion of the approved program of research and training.

General information on Postdoctoral Scholar Status and privileges may be obtained from the Fellowship and Assistantship Section of the Graduate Division, 1228 Murphy Hall.

Visiting Scholars

Facilities of the University are made available whenever possible to senior scholars and distinguished visitors with doctoral degrees from U.S institutions or their foreign equivalents, who wish to become associated with UCLA to pursue independent research or advanced study for a limited period of time, normally not to exceed one calendar year. Such persons are "Visiting Scholars." Ordinarily, they are self-supported, or with adequate support funds from other sources outside the University. Thus, they should be clearly distinguishable from Postdoctoral Scholars who "enroll" with the Graduate Division for an approved postdoctoral research or training objective under faculty supervision, and from academic appointees who are primarily employees.

Prospective Visiting Scholars should communicate in advance with the Chair of the department, or Head of the academic unit, with which they wish to become associated. On recommendations of the Chair of the department, indicating that the necessary faculty sponsorship and facilities are available, formal invitations are issued by the Dean of the Graduate Division.

General information on Visiting Scholar status and privileges may be obtained from the Fellowship and Assistantship Section of the Graduate Division.

Admissions

An applicant for admission to the Graduate Division from a U.S. college or university is expected to hold a bachelor's degree from a regionally accredited institution, comparable in standard and content to a bachelor's degree from the University of California. In addition, the applicant is expected, *at minimum,* to have achieved a "B" average, or its equivalent if the letter grade system is not used, for the last two years of undergraduate and any postbaccalaureate study.

An applicant for admission to the Graduate Division with a university-level degree from a fully recognized academic institution outside the United States, is expected to hold an academic degree or professional title (i.e., Engineer) comparable in standard and content to a bachelor's degree from the University of California. Eligibility is judged by grades (marks), class obtained, or rank achieved in class. For preliminary screening purposes, foreign applicants should accompany a request for application material with information about previous academic background (names of institutions attended, degrees obtained or expected, and scholarship attained), and state the proposed graduate program or major field of interest. Because the evaluation of foreign credentials may take considerable time, however, applicants with credentials from institutions in other countries are advised to submit applications at least two months before the published preferred dates for receipt of applications and supporting materials.

Please note that whatever the type of educational system from which one has graduated, *there are no special graduate, limited or unclassified categories of admission to UCLA.* On some occasions, however, applicants may be considered for admission for coursework without a degree objective (No Degree Objective-NDO). For example, applicants in this category may be teachers with master's or higher degrees who wish a term or two of refresher study for sabbatical leave, foreign students on a year's stay in the United States, or those with a professional master's degree in one discipline wishing to gain knowledge in another. Those applying for this status must meet the above general University admission requirements.

Application

The prospective student may obtain the combined application for Graduate Admission/Fellowships and Financial Aid forms in person or by mail from Graduate Admissions, Graduate Division, 1247 Murphy Hall, UCLA, Los Angeles, California 90024, or from the department in which he/she wishes to study. The pamphlet, *UCLA Information for Graduate Applicants* which lists the major fields offered, the individual departmental requirements, and other pertinent information, is part of the application packet.

Application for admission to graduate status is limited to Fall, Winter, and Spring Quarters of the regular academic year. Some departments limit admission to Fall Quarter only, because of their sequential arrangement of courses and seminars. Such restrictions are listed in the *UCLA Information for Graduate Applicants* pamphlet. Enrollment in courses in the Summer Sessions does not constitute admission to graduate status (see Enrollment in Summer Sessions, page 17).

Applications and supporting papers for those interested in applying for the 1982-83 academic year should be submitted to Graduate Admissions, Graduate Division, on or before the following dates:

December 30, 1981 for the Fall Quarter, 1982

October 1, 1982 for the Winter Quarter, 1983

December 30, 1982 for the Spring Quarter, 1983

Applications postmarked after the above preferred dates will be considered only in accordance with enrollment limitations, and availability of funds remaining for financial support.

The following materials should accompany the application:

1. Application fee of $25.00 (nonrefundable), by check or money order payble to the Regents of the University of California.

2. Official transcripts of record, *in duplicate,* from *each* college or university at which the applicant has completed work. (Transcripts should accompany or immediately follow the application and are nonreturnable.)

One set of transcripts will become a part of the Graduate Admissions file, and the other set will be sent to the major department to assist in the evaluation of the applicant's past record and for advisory purposes regarding his/her graduate studies at UCLA. If the student has graduated from UCLA or from another University of California campus and completed there the last two years of study for the bachelor's degree, transcripts are requested from only that campus. (For detailed information, see *UCLA Information for Graduate Applicants.)*

The Graduate Record Examination

As an additional means of evaluating the qualifications of applicants, a number of departments and schools require the nationally standardized Graduate Record Examination (GRE). (For departments requiring the GRE, consult *UCLA Information for Graduate Applicants* pamphlet.)

Departments requiring the GRE will not make a recommendation prior to receipt of the score reports.

Applications for and information concerning the GRE may be obtained from offices of the Educational Testing Service, either at Box 995, Princeton, New Jersey 08541, or at 1947 Center Street, Berkeley, California 94704. *GRE scores should be directed to the department. Graduate Admissions has no provision for forwarding these scores.*

U.S. students who will be seniors in 1981-82, who are receiving financial aid at an undergraduate institution, and whose estimated parental contribution is calculated at zero are eligible to apply for GRE Fee Waivers. For additional information on the GRE Fee Waiver, write to the Associate Program Director, Educational Testing Service, Princeton, New Jersey 08541.

1982-83 GRE TEST DATES

October 16, 1982 — February 5, 1983
December 11, 1982 — April 23, 1983
June 11, 1983 (Aptitude Only)

We strongly urge that all nationally administered tests be taken by February.

Letters of Recommendation

Though letters of recommendation are not a Graduate Division requirement, most graduate professional schools, departments and interdepartmental programs require applicants to submit three letters of recommendation attesting to the ability of the applicant to succeed in graduate study. The letters are typically used to augment, validate or explain the information provided in the formal application, Statement of Purpose, and/or essay. For some applicants, the information provided in these letters will mean the difference between acceptance and rejection. The forms to be used are part of the application packet.

Foreign Applications

Foreign applicants should submit official transcripts of record, *in duplicate,* for all college and university work. *Official records* are defined as original documents issued by the institution which bear the actual — not a photocopy — signature of the Registrar and the seal of the issuing institution. Applicants should not send the original of an academic record which cannot be replaced, but should obtain a properly certified copy instead. College and university transcripts must show subjects studied, examination grades achieved, and award of degrees. Specific instructions are given in the information pamphlet for admission requirements and required credentials. (For detailed information, see *UCLA Information for Graduate Applicants.)*

Foreign Applicants are advised not to come to UCLA *until they receive formal notice of admission from the Director of Graduate Admissions.* They are notified by airmail as soon as a decision has been reached and, if requested on the application, the Certificate of Eligibility to secure the appropriate visa is enclosed with the notification of admission. Foreign applicants who have been accepted are encouraged to report to Graduate Admissions as well as to the Office of International Students and Scholars as soon as possible after they arrive at UCLA in order to receive assistance in completing admission and registration procedures.

English as a Second Language Placement Examination (ESLPE)

Since English is the language of instruction at UCLA and success in graduate study depends largely on facility in its use, foreign students whose first language is not English are required to take a proficiency examination before the term in which they are to register. The achievement in this examination determines whether they will be required to include English courses in their program or will be permitted to carry a full or a moderate graduate program. If they should be required to take English courses, they should anticipate spending a longer period of time at the University than they normally would require to complete a degree program. Admission of an applicant who fails to pass this examination will be deferred until the applicant has acquired the necessary proficiency in the use of English.

Foreign students who hold a bachelor's or higher degree from a university located in the United States or in another country in which English is the spoken tongue and the medium of instruction, or who have completed at least their last two years of full-time study at such an institution, are not required to take the UCLA English Examination.

As a preliminary screening test, nonetheless, foreign applicants are urged to take the Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service in some 95 foreign centers. Applications for the TOEFL Examination may be obtained from the Educational Testing Service, Box 995, Princeton, New Jersey 08541. It is a useful and important way of helping students determine whether they are well enough prepared to undertake graduate study conducted in English before they make extensive plans for graduate study in the U.S.A. *The TOEFL, however, may not substitute for the required examination in English, which must be taken at UCLA on arrival. As a matter of policy, neither is any other English test (i.e., Michigan Test) accepted in place of the examination given at UCLA.*

Even though the TOEFL examination is not a general University requirement, some departments request it and will not make a recommendation unless the test result is submitted. (Consult *UCLA Information for Graduate Applicants* pamphlet.)

Application Review and Notice of Admission

Graduate Admissions screens all applicants to determine whether or not they meet University minimum requirements for graduate status. Ordinarily, only the applications of those students who have fulfilled at least the minimum requirements are then referred to the department. There they are subjected to a more specific and intensive review. Although, at this stage, departments may choose to make contact with applicants, Graduate Admissions alone is empowered to make the formal offer of admission, taking the departmental recommendation into full consideration. Thus, *the official admission letter is issued by the Director of Graduate Admissions.*

To applicants offered admission, Graduate Admissions sends instructions on required registration procedures with the formal notification.

Applicants who are offered admission with work in progress are reminded that their admission is contingent upon receipt of evidence of satisfactory completion of this work, plus statement of award of degrees and all other required materials upon which admission is contingent. The applicant should also be aware of any conditions placed on his/her admission as given in the admission letter or as received from the department.

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 the holders of either an academic or professional degree may have the pressing need to earn another degree in an area quite different from that of their first endeavors.

All applicants for a second academic graduate degree at the same level as, or at a lower level than the graduate degree they already hold, will be required to show compelling cause to the department before it reviews and recommends admission by the Dean of the Graduate Division.

If admitted for a second graduate degree, students will be held to all the usual degree requirements and University regulations pertaining to fees, registrations, examinations, advancement to candidacy, residency, etc. Courses already applied to the earlier degree cannot be applied to the second degree.

Enrollment in Summer Session Courses

Enrollment of prospective graduate students in Summer Session courses does not constitute admission to graduate status in the University, which is possible only through application for graduate admission during the regular academic year. Students who wish to apply Summer Session courses to their subsequent graduate programs should consult in advance with their departmental graduate advisers concerning this possibility. This is true also for students readmitted to graduate status who wish to resume their study in the Summer Sessions. (See Readmission, below.)

Information and applications may be obtained from the Office of Summer Sessions, 1254 Murphy Hall, University of California, Los Angeles, California 90024. The 1982 Summer Session bulletin will be available from that office by March 1.

Renewal of Application

An offer of admission is valid for a specific quarter only. Applicants who filed applications but were not admitted, or who failed to register in the quarter for which they were accepted in graduate status, but who wish to reactivate their applications for a later quarter, should file a Renewal of Application form. Such forms are obtained from Graduate Admissions, or from the departments, and should be submitted to Graduate Admissions, Graduate Division, 1247 Murphy Hall, UCLA, Los Angeles, California 90024. Filing dates are the same as those for new applications. The Renewal of Application should be accompanied by official transcripts, *in duplicate,* of any college or university work completed since the former application. Acceptance for admission at any earlier date does not guarantee approval of the Renewal of Application.

Only *one* renewal of application will be accepted without the $25.00 (nonrefundable) application fee. The application fee is due with *each* renewal of application filed after the first one.

Applicants seeking admission more than two years after their original application, file new applications rather than Renewal of Application forms, since records are not retained more than two years.

Readmission

Current University requirements state that unless granted a formal leave of absence, continuing graduate students who fail to register are considered to have withdrawn from the University and must compete for readmission with all other applicants. Thus, applicants who have registered at any time as a graduate student at UCLA, whether having completed a graduate program or not, *must not* file the "Application for Graduate Admission/Fellowship and Financial Aid" form. Instead, they should request an "Application for Readmission" form from Graduate Admissions, Graduate Division, 1247 Murphy Hall, UCLA, Los Angeles, California 90024.

Applications for readmission should be accompanied by:

(a) Application fee of $25.00 (nonrefundable), by check or money order payable to the Regents of the University of California. Fee verification from another University of California campus is not acceptable.

(b) Official transcripts of record, *in duplicate,* for all college and university work completed since last registration at UCLA.

(c) The "Graduate Petition for Change of Major," if appropriate. This form should be requested with the "Graduate Application for Readmission" if reapplying in a *"new"* major.

Formal application for readmission, however, is not required of a student returning from an official leave of absence.

Admission to Concurrent and Articulated Degree Programs

In addition to those programs offered in an individual discipline, it is possible to complete studies leading toward two degrees through concurrent and articulated degree programs. Both of the programs have the advantage of allowing the student to acquire two degrees in less time than normally required if the courses of instruction are taken in sequence. The aim of these programs is to provide an integrated curriculum of greater breadth between the two disciplines. The programs differ in that concurrent programs are designed to allow a specified amount of credit to apply toward both degrees, while articulated programs do not allow any credit overlap.

Programs leading to concurrent degrees have been approved 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.

Management, M.B.A. — Architecture and Urban Planning, M.A.

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.

Programs leading to articulated degrees are offered by the following disciplines:

*African Area Studies, Interdepartmental M.A. — Public Health, M.P.H.

Latin American Studies, Interdepartmental M.A. — Architecture and Urban Planning, M.A.

Latin American Studies, Interdepartmental M.A. — Education, M.Ed. (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. — Any Graduate Division major, Ph.D.

Oral Biology, M.S. — Dentistry, D.D.S. or Certificate

In addition to the application form to the graduate program, the applicant should also file a separate application to the School of Law, Medicine, or Dentistry where they are involved in an articulated or concurrent degree program.

*Applicants apply only to and are admitted only to African Area Studies. For further information, see African Area Studies or Public Health sections in this *Catalog*.

Admission to the Schools of Dentistry, Law and Medicine

Applicants for programs leading to the M.A., M.S., and Ph.D. degrees in departments of the School of Medicine or the School of Dentistry should apply for admission to the Graduate Division in accordance with procedures described above. For admission to the D.D.S., J.D. and M.D. degree programs in the Schools of Dentistry, Law, or Medicine, applicants should write to the respective schools for their published announcements and for information and application procedures.

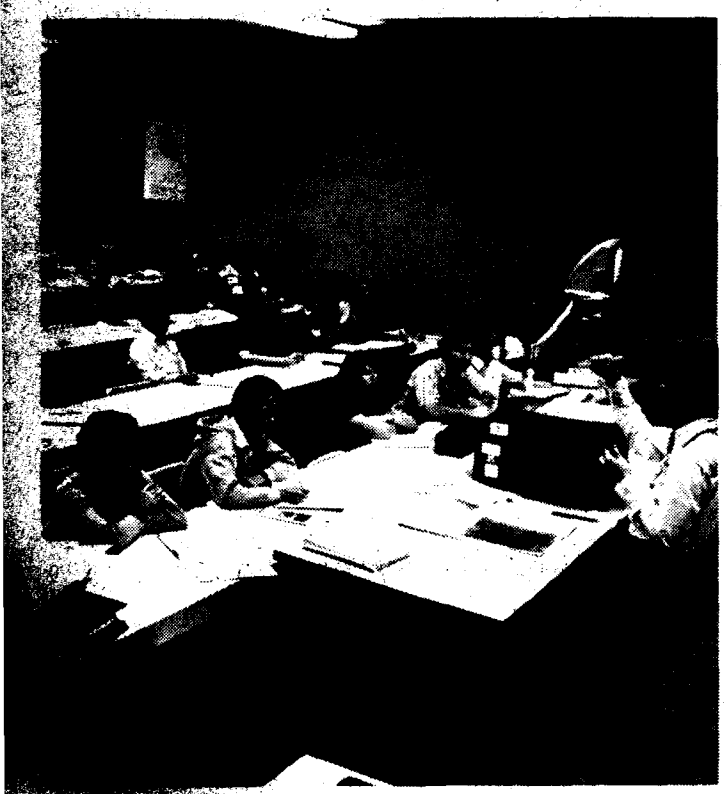
Nondiscrimination

The University of California, in compliance with Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 (45 CFR 86), and Sections 503 and 504 of the Rehabilitation Act of 1973, does not discriminate on the basis of race, color, national origin, religion, sex or handicap in any of its policies, procedures or practices; nor does the University, in compliance with the Age Discrimination in Employment Act of 1967 and Section 402 of the Vietnam Era Veterans Readjustment Act of 1974, discriminate against any employees or applicants for employment on the basis of their age or because they are disabled veterans or veterans of the Vietnam era. This nondiscrimination policy covers admission, access and treatment in University programs and activities, and application for and treatment in University employment.

In conformance with University policy and pursuant to Executive Orders 11246 and 11375, Section 503 of the Rehabilitation Act of 1973, and Section 402 of the Vietnam Era Veterans Readjustment Act of 1974, the University of California is an affirmative action/equal opportunity employer.

Inquiries concerning Title IX may be directed to Campus Counsel, 2241 Murphy Hall, UCLA, phone (213) 825-4042 or to the Director of the Office for Civil Rights, Department of Education, Washington, D.C., 20202.

Students may complain of any action which they believe discriminates against them on the ground of race, color, national origin, religion, sex or handicap and may contact the Dean of Student Relations, 2224 Murphy Hall, for further information and procedures.



Financial Assistance

Fellowships, Grants, and Assistantships

Numerous types of financial assistance are available to graduate students at UCLA. Student support funds are categorized in two areas: support based on academic excellence and support based on financial need. These are not mutually exclusive; that is, a student who is eligible for need-based financial aid may receive an award based on academic excellence and vice versa. *Graduate applicants are strongly urged to apply for all categories for which they may qualify.* Note the applications for national, international, or special grants or fellowships other than those administered by UCLA, do not preclude applying for UCLA support.

The Fellowship and Assistantship Section of the Graduate Division publishes an annual general information brochure which describes the following types of funds available to graduate students: 1) *Teaching Assistantships* provide teaching experience of undergraduates with faculty supervision; 2) *Research Assistantships* provide experience working on faculty-supervised research projects; 3) *Fellowships and Registration Fee Grants* provide stipends and fees for graduate study; and 4) *Nonresident Tuition Waivers* provide tuition payment for U.S. and foreign students who are not residents of the State of California *(Other types of financial assistance are described below.)*

Entering graduate students who wish to be considered for University-administered awards should complete the combined "Application for Graduate Admission, Fellowship and Financial Aid" form which may be obtained from the Graduate Admissions Office. Completed applications must be returned to that office by the December 30 published deadline. Some departments have earlier deadlines and therefore students should consult the information pamphlet which accompanies this application for details.

Students who have applied to Graduate Admissions within the last two years, but did not register, or those who have registered previously at UCLA as graduate students, should request either the "Renewal of Application" or the "Graduate Application for Readmission" form.

All of the above forms contain a "Graduate Financial Awards Section" where students may check the types of University-administered awards for which they wish to be considered.

Some restricted fellowships programs require a special application form which is available in both the "Application for Graduate Admission, Fellowship and Financial Aid" and in the *UCLA Graduate Student Support Resources* brochure.

Continuing graduate students should complete the "Fellowship and Assistantship Application for Continuing Students" form which is available in departments, organized research units, and the Fellowship and Assistantship Section. Continuing students must file a separate application with the Financial Aid Office in order to be considered for funds (grants, loans and work-study jobs) based on need.

The In-Candidacy Fee Offset Grant Program provides financial assistance to eligible Ph.D. students who have been advanced to candidacy and who will complete their degree requirements within the normative time set by their departments. The grant pays a student's Educational Fee. This program is described in detail under Doctoral Degrees, page 36.

The Fellowship and Assistantship Section maintains a library of reference materials on extramural funding. The library is located in Room 1228 Murphy Hall. Program descriptions and information regarding application procedures are cataloged according to the following: research and/or dissertation year; travel; by discipline; other institutions; information on teaching/study abroad; minority students; women; foreign nationals; arts/writers; study/research abroad; postdoctorals; miscellaneous.

In addition, the following publications are also available for reference: *Annual Register of Grant Support; The Grants Register; The Foundation Directory; Directory of Internships; Grants and Aid to Individuals in the Arts; Handbooks on Study Abroad Programs (IIE); NSF Program Guide; NIH Program Guide; UNESCO Study Abroad.*

Supplementation Policy

Supplementation refers to the provision of funds to graduate students in addition to support provided by fellowships, grants and assistantships. During an academic year, the aggregate amount of University-administered financial support which may be received by any student may not exceed the salary level paid to a 50% time Teaching Fellow plus $500 for each dependent.

Supplementation by employment within the University is restricted to policies set forth in the *Academic Apprentice Personnel Manual.* It is intended that the same restrictions apply to off-campus employment, although this is difficult to monitor. Students who are recipients of federal, state or privately funded fellowships must adhere to the supplementation limits, if any, of the individual funding agency. Students who receive need-based aid from the Financial Aid Office and the Graduate Affirmative Affairs Office may not supplement their awards during the academic year if the combined amount of support results in a total income greater than the students' eligibility as determined by the Financial Aid needs analysis.

Any questions regarding these policies may be directed to the Fellowship and Assistantship Section of the Graduate Division, 1228 Murphy Hall.

Teaching Assistant Advance Loan Check

Each graduate student appointed as a Teaching Assistant, Teaching Associate or Teaching Fellow is eligible to receive, upon application, an interest-free advance loan check through the Fellowship and Assistantship Section of the Graduate Division. These advance loans are discharged by payroll deductions with one-half of the loan deducted from the second paycheck and the remaining amount from the third paycheck of the quarter. Authorization forms may be obtained from the student's department.

The Graduate Affirmative Affairs Office

The Graduate Affirmative Affairs Office was established to increase the graduate enrollment of students from those groups which, as a result of economics or societal inequities, have been traditionally unrepresented in the University.

Financial support is available for students from groups with historically low participation in graduate work such as American Indians, Asian Americans, Blacks, and Chicanos, in graduate study leading to the master's or doctoral degree in the sciences, humanities, social sciences, and the arts, including the Schools of Architecture and Urban Planning, Library and Information Science, and Education.

Out-of-state applications in the applied and pure sciences are particularly encouraged, as well as those fields in which manpower availability pools for ethnic minorities must be increased.

Applicants must be U.S. citizens or permanent California residents and admitted to graduate status, in order to be eligible for these awards. In certain instances, an additional departmental application for admission is required. Students should contact the major department for full details on admission requirements. Students interested in the professional fields listed below should address their inquiries to the professional school of their choice.

Management
Dentistry
Engineering
Computer Science
Law
Medicine
Nursing
Public Health
Social Welfare

Applications for other areas of study may be obtained by contacting the Graduate Counseling Affirmative Affairs Office, 1248 Murphy Hall. Retention and degree attainment are primary goals of the program. Counseling and academic assistance on a one-to-one basis are provided to students enrolled in graduate study through the Graduate Affirmative Affairs Office.

Graduate Advancement Program Awards (GAP)

Awards are made on the basis of academic record and promise and award amounts are limited to the student's needs. A financial aid application must be submitted. A limited number of awards are in the form of fellowship grants. Others are a combination of grant, work-study and loan to cover fees and to provide a modest living allowance.

Graduate Opportunity Fellowship Program (GOFP)

Awards are for one academic year and may be renewed for a second year upon application and satisfactory progress. New awards are limited to entering students admitted to departments approved under this program. Fellowships provide up to $4200 per year in stipend plus registration fees and, where applicable, nonresident tuition.

Graduate and Professional Opportunity Program (G*POP)

Fellowships are for one academic year and may be renewed for second and third years upon satisfactory academic progress. New awards are limited to entering students in the fields of Archaeology, Management and Urban Planning. Applications are particularly encouraged from Native Americans, Blacks, and Chicanos — groups which have severe academic underrepresentation in these fields. Awards provide $4500 per year stipend plus registration fees and nonresident tuition where applicable.

Dorothy Danforth Compton Fellowship

UCLA has been selected as one of 10 universities to receive a grant from the Danforth Foundation to support outstanding Black, Mexican American, Native American, and Puerto Rican students who are committed to careers in college and university teaching.

Under this grant, a limited number of 4-year fellowships will be awarded to entering students enrolled in programs leading to the Ph.D. degree in the Humanities, Social Sciences, Physical Sciences, Health Sciences, and Fine Arts.

During the first and fourth years of the fellowship, recipients will receive a $5000 stipend plus registration fees and, where applicable, nonresident tuition. During the second and third years, students will serve as teaching or research assistants and will receive the appropriate salary. Applicants must be in departments offering a doctoral program having teaching or research provisions.

Other Financial Assistance

Graduate students are eligible for other forms of financial assistance including various types of grants, loans, and work-study jobs. These awards are based on need computed according to federally-accepted criteria. Need is determined by subtracting an applicant's resources from allowable school-related expenses. These resources include a student's assets and expected earnings, parental contributions, a spouse's earnings, and University and non-University fellowships, traineeships and assistantships.

Entering graduate students who wish to be considered for financial aid should check the appropriate box in the financial aid awards section of the "Application for Graduate Admission/Fellowship and Financial Aid." The Financial Aid Office will forward a complete packet containing application forms, detailed instructions, and general information to each student checking this box. Continuing students may obtain the graduate financial aid application packet at window A128 Murphy Hall in November of the preceding year.

International students holding F-1 and J-1 student visas or other temporary visas are not eligible to apply for financial aid for their first year of study at UCLA. They are urged, therefore, to make every effort to secure funds from other sources. International students who have completed at least one year of study at UCLA are eligible to apply for University financial aid grants and President's Work-Study awards.

Students are usually awarded a financial aid "package" which is a combination of grants, loans, and work-study job opportunities.

Types of Aid. A grant is an outright gift and does not have to be repaid. There are several federal, state, and University grants.

Loans include Educational Fee Deferment Loans, National Direct Student Loans, Health Profession Loans, Nursing Loans, and Regents and University Loans. Most of the loans awarded through the Financial Aid Office are interest-free during the time an individual is a registered student. Repayment of principal plus 3% to 7% interest begins 6, 9, or 12 months after a student is no longer registered at the University, depending on the type of loan.

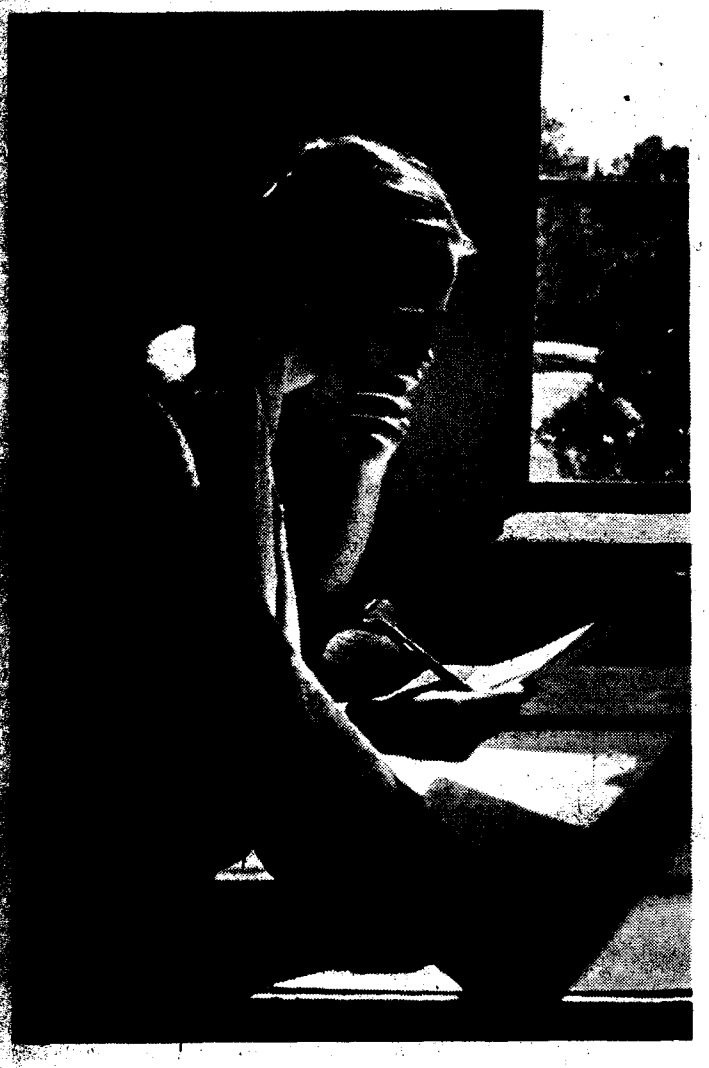
Work-study employment provides on-campus jobs and jobs with nonprofit off-campus agencies. Whenever possible, work-study employment is provided in a student's particular academic field of interest.

The Financial Aid Office also administers the Federal and California Guaranteed Student Loan Programs enabling students to negotiate loans with private lending institutions. (Applications are available throughout the year at window A217 Murphy Hall.)

Emergency loans of $75 or less are available to all registered students from the Office of Student Loan Services, A227 Murphy Hall. Emergency loans are repayable within one month.

The In-Candidacy Fee Offset Grant Program provides financial assistance to eligible Ph.D. students who have been advanced to candidacy and who will complete their degree requirements within the normative time set by their departments. The grant pays a student's Educational Fee. This program is described in detail under Doctoral Degrees, page 36.

Further information on financial aid and applications for assistance can be obtained at the Financial Aid Office, A129B Murphy Hall.



General Information and Regulations

Graduate Courses

Courses numbered in the 200, 400, and 500 series are ordinarily open only to students who have completed those courses basic to the subject matter of the course. Graduate courses and seminars which can fulfill the minimum graduate course requirement of any advanced degree are numbered in the 200 series. All graduate courses especially designed for programs leading to graduate degrees other than the M.A., M.S., and Ph.D. are numbered in the 400 series; these may not be used to satisfy the minimum graduate course requirements for M.A. or M.S. degrees. Courses numbered in the 500 series are directed individual study or research at the graduate level (see Individual Study or Research Courses, below). Courses numbered in the 300 series are professional courses or preprofessional experience and are not applicable toward University minimum requirements for graduate degrees.

Individual Study or Research Courses

Graduate individual study or research courses are numbered as follows: 596 (directed individual study or research); 597 (preparation for the master's comprehensive examination or doctoral qualifying examinations); 598 (master's thesis research and preparation); and 599 (doctoral dissertation research and preparation). Certain 500 series courses, with limitations as to their use, have been approved by the Graduate Council for Satisfactory/Unsatisfactory grading for application to the minimum course requirements for master's degrees, or for repetition for credit. The same method of grading (either by letter grade or on an S/U basis) is determined in advance for all of the students enrolled in a particular course. Before enrolling, students should obtain full information from the Graduate Adviser in the department which offers the course.

No more than two courses in the 500 series shall apply toward the Divisional minimum of nine courses required for a master's degree; and only one of these two courses may be counted toward the minimum of five graduate courses required for the degree.

Master's degree programs requiring more than the minimum nine courses may allow proportionately more 500 series courses, as follows: for programs of 10 to 11 courses, two 500 series courses; for programs of 12-15 courses, three 500 series courses; and for programs of 16-18 courses, four 500 series courses.

Standard of Scholarship

UCLA requires at least a B (3.0) average in all courses taken in graduate status on any campus of the University of California, and in all courses applied toward advanced degrees. This standard applies to all graduate students, including candidates in graduate level certificate programs. In courses graded on an S/U basis, a grade of S (Satisfactory) shall be awarded only for work which would otherwise receive a grade of B or better.

Scholarship Probation

Graduate students are considered in probationary status and subject to dismissal if their cumulative scholarship average in all work attempted in graduate status falls below a B (3.0), or if their work in any two consecutive quarters falls below a B (3.0) average. The Dean of the Graduate Division, in consultation with the student's major department, determines his/her eligibility to continue graduate study. Students who are allowed to continue in probationary status are required to make expeditious progress toward improvement of their scholarship.

Disqualification and Appeal of Disqualification

The record for any student who is subject to disqualification for reasons other than failure to maintain a grade point average greater than 3.0 will be reviewed by the Graduate Division, in consultation with the student's Graduate Adviser. Unless there are indications of procedural error or other substantive mitigating factors to explain the student's record, the student will then be disqualified from further registration in graduate status on the campus, and will be given written notice stating the reasons for this action.

A student who is subject to disqualification or who has been disqualified may submit a written appeal for reconsideration for *cause* to the Dean of the Graduate Division. Such appeals will be considered only if based upon appropriate cause such as: (a) procedural error, (b) judgments based upon non-academic criteria, (c) personal bias, or (d) specific mitigating circumstances contributing to the student's performance. Alleged errors in academic judgment or evaluation will not be considered as appropriate bases for consideration of a student's appeal from disqualification. In cases of appropriate cause, the Dean of the Graduate Division will refer the appeal to the Graduate Council's standing Committee on Instruction and Degree Requirements.

In all cases of student appeals, so referred, the student must submit a written statement of the basis for his/her appeal and is entitled to a personal appearance before the Committee on Instruction and Degree Requirements. The Committee may solicit information on the matter from any other person or office. This Committee will make a recommendation to the Dean as to the disposition of the case and the Dean of the Graduate Division will make the final decision. In reporting the final decision of the Dean to the student, the basis for the decision, its effective date, and the nature of the recommendations of the Committee on Instruction and Degree Requirements will be included.

Grading Regulations

General

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 upon the course description as approved by the appropriate course committee.

The final grade in the course is based upon 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.

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, the Committee on Privilege and Tenure shall communicate that information to the Academic Senate Chair. Within a period of two weeks after notification, guided by the Committee on Committees, the Academic 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 Academic Senate 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.

Grading of Graduate Students

The work of all graduate students is reported in terms of the following grades: A (superior achievement), B (satisfactorily demonstrated potentiality for professional achievement in the field of study), C (passed the course but did not do work indicative of potentiality for professional achievement in the field of study), F (fail), I (incomplete), IP (in progress), DR (deferred report), S (satisfactory), U (unsatisfactory). The passing grades A, B and C may be modified by plus (+) or minus (−) suffixes. Grade points per units are assigned by the Registrar as follows: A—4, B—3, C—2, F—0. "Plus" grades (except A+) carry three-tenths grade point more per unit and "minus" grades carry three-tenths grade point less per unit than unsuffixed grades. The grade A+ carries 4.0 grade points per unit, the same as for an unsuffixed A; but when A+ is reported it represents extraordinary achievement. Courses in which a student receives an S grade may be counted in satisfaction of degree requirements, but courses in which either an S, U, DR, I, or IP has been awarded are disregarded in determining a student's grade point average.

The grades A, B, and S denote satisfactory progress toward a degree. A graduate student is subject to dismissal if his/her cumulative grade point average falls below 3.0.

The "I" Grade

The grade "I" may be assigned when a student's work is of passing quality, but is incomplete. The grade "I" is only assigned when it is established to the instructor's satisfaction that the student's work is incomplete for good cause. When the instructor assigns the grade "I" on the grade sheet, the grade should be accompanied by a notation specifying what work must be done to remove the incomplete. The student is entitled to have the grade "I" replaced by a passing grade and to receive unit credit and grade points provided he/she satisfactorily completes the work of the course by the end of the next full quarter that he/she is in residence in regular session following the quarter in which the "I" was received. The Dean of the Graduate Division has authority to extend the deadline for completion in the event of unusual circumstances that would clearly impose an unfair hardship on the student if the original deadline were maintained. If the work is not completed, the grade "I" is automatically replaced with F, NP or U as appropriate.

The Graduate Council may establish rules under which the authority to approve limited extensions of time for graduate students is delegated to departmental advisers.

The S and U Grades

With the approval of the Graduate Council, and the consent of the departments involved, individual study or other work undertaken for credit toward a degree by a graduate student may be evaluated by means of the grades S and U. A graduate student in good standing may enroll each term in one course graded on an S/U basis. This course shall be outside the major field and in addition to those individual study and research courses (500 series) graded S/U in the student's major field. A grade of S is awarded only for work which would otherwise receive a grade of B or better.

The IP Grade

(In Progress). For courses authorized to extend over more than one quarter and where evaluation of the student's performance is deferred until the end of the final term, a provisional grade of IP is assigned in the intervening term(s). The provisional grade is replaced by the final grade(s) if the student completes the full sequence. The Graduate Council is authorized to regulate the award of credit in cases where the full sequence is

not completed. Authorization for the use of IP grades in graduate courses shall be by the Graduate Council.

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 a) upon written request of an instructor, provided that a clerical or procedural error is the reason for the change; or b) upon 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.

Repetition of Courses

Unless repetition of the course for credit has been authorized by the Committee on Undergraduate Courses and Curricula or the Graduate Council, repetition is subject to the following conditions:

A student may repeat only those courses in which he/she received a grade of C−, F, or U. Courses in which a grade of C− or F has been received may not be repeated on a S/U basis.

Repetition of a course more than once requires approval by the Dean of the Graduate Division in all instances.

Degree credit for a course is given only once, but the grade assigned at each enrollment is permanently recorded.

All courses attempted and graded on the A, B, C, F, basis and modifications thereto, including repeated courses, are used in computing the grade point average.

The DR Grade

The grade DR (deferred report) is entered on the student's record: a) when to the faculty member's knowledge, the student's work in the course is complete, but the faculty member is not able to assign a grade; or b) when disciplinary proceedings are in progress. The DR is not calculated in any way in the student grade point average. The DR is changed to a grade, or perhaps to an Incomplete, only when the Registrar receives a written request from the instructor which indicates that the student has clarified the situation.

The report of the grade DR must be accompanied by a letter from the instructor to the Dean of the Graduate Division, and to the student stating the basis of the action. For students enrolled in a course approved by the Graduate Council, the Dean of the Graduate Division is the Dean of Record. The Dean establishes a date or a specific circumstance terminating the period of the Deferral of Report and informs the Registrar, the instructor and the student. Unless changed by the instructor as specified in the preceding paragraph, the DR automatically becomes an F grade.

Satisfactory/Unsatisfactory Grading

Graduate students in good standing may, with the consent of the instructor, enroll for Satisfactory/Unsatisfactory grading in one graduate or upper division course each quarter *outside* their major field, in addition to any courses offered only for S/U grading *inside* their majors. Except in the case of interdepartmental majors, Satisfactory/Unsatisfactory graded courses outside the major may apply, if the course itself is applicable to degree requirements. With the exception of 500 series courses in the major and any courses outside the major, S/U graded courses are not applicable toward degree requirements or toward University or Senate-approved academic residence requirements for graduate degrees (see also Individual Study or Research Courses, page 20).

Program changes involving a change to or from S/U grading may not be made after the regular deadline for dropping courses (see Calendar, page vi).

Removal of "I" (Incomplete) Grade

The grade I (Incomplete) is assigned when a student's work is of passing quality but is incomplete for good cause. A grade I (assigned after July 1, 1972) will not be taken into account in calculating the grade point average for one quarter after it is assigned. The student is entitled to have the grade I replaced by a grade and to receive unit credit and grade points providing he/she satisfactorily completes the work of the course by the *end of the next full quarter* that he/she is *in academic residence* in regular session following the quarter in which the I was received. If the work is not completed by the end of the next quarter of residence, the I grade will automatically be replaced with the grade F or U (Unsatisfactory) as appropriate. On the other hand, it is not necessary for a student to be registered at the time he/she completes the work to remove an I grade.

The work for a course for which the I grade has lapsed to an F or U may, with the permission of the instructor, be completed in a subsequent quarter and the appropriate earned grade assigned. Until that time, however, the F or U grade will appear on the student's record and be calculated in the grade point average. A student filing to remove an I grade which has lapsed to an F or U follows the procedures for removing an I grade described below. When the grade is assigned by the instructor, the Registrar will remove the lapsed F or U and replace it with the earned grade.

While completing the conditions for removal of the I grade, the student obtains "Petition for Removal of Incomplete Grade" forms at the departmental office, completes a petition for each course (name, address, instructor, course, quarter), submits it to the instructor for signature, pays the $5 fee (one fee for all petitions submitted together) at Main Cashier, 1125 Murphy Hall, and files the petition with the Registrar at Information Window "A", Murphy Hall.

The "Petition for Removal of Incomplete Grade" should be filed not later than the sixth week of instruction in the next quarter of registration after the Incomplete grade was assigned. Coursework must be completed by the end of the quarter to avoid lapse to grade F (see UCLA Grading Regulations, page 21).

When the required work has been completed, the instructor fills out the "Petition for Removal of Incomplete Grade," on which the final grade is entered, and forwards it to the Registrar.

Summer Sessions

Enrollment of prospective graduate students in Summer Session courses does not constitute admission to graduate status in the University, which is possible only through application for graduate admission during the regular academic year. This is true also for students readmitted to graduate status who wish to resume their study in Summer Sessions.

Graduate students should register continuously in the Fall, Winter, and Spring Quarters. Enrollment in either Summer Session does not constitute a substitution for the requirement of continuous registration.

Students who wish to enroll in Summer Session courses and apply them to requirements for graduate degrees or University-recommended credentials should consult in advance with their departmental graduate advisers concerning this possibility.

Academic Residence

Enrollment in two six-week Summer Sessions (must be consecutive for doctoral candidates) counts as one quarter of residence provided the candidate is enrolled in each session for the equivalent of at least 2 units of upper division and/or graduate work as given in a regular quarter. Enrollment in an eight-week Summer Session counts as one quarter of residence provided the candidate is enrolled for the equivalent of at least 4 units of upper division and/or graduate work as given in a regular quarter. Academic residence that is earned through enrollment in Summer Sessions is limited to one-third of the degree requirements.

Course Credit

Regular session courses offered in Summer Session at UCLA by regular faculty qualify automatically for credit toward a higher degree. Regular session courses offered in Summer Session at UCLA by visiting faculty

may apply, provided the chair of the department so recommends, in advance, to the Graduate Dean.

Summer Session courses offered elsewhere may not apply, unless approved in advance by the Committee on Instruction and Degree Requirements of the Graduate Council. Recommendations for such credit should be made by the department chair of the students involved.

Applications and information on course offerings may be obtained from the Office of Summer Sessions, Room 1254 Murphy Hall.

Credit by Examination

Graduate students in good standing may petition to the appropriate instructors, the department, and the Dean of the Graduate Division for permission to take courses for credit by examination, up to a maximum of three courses. To be eligible for this privilege a student must be registered in graduate status at the time of the examination. Credit earned by examination may be applied toward the minimum course requirements for master's degrees, but it cannot apply to academic residence requirements for master's and doctoral degrees.

Forms for this purpose are available in the Student and Academic Affairs Section of the Graduate Division. There is a $5.00 fee for each credit by examination petition.

Registration and Enrollment Procedures

Registration

Registration is the payment of fees, enrollment in classes and the filing of various informational forms. Students' names are not entered on official rolls of the University unless the registration process is complete as published by the Registrar in the *Registration Circular* and the *Schedule of Classes*. Students who fail to complete and file all forms by the established deadlines may be delayed or even prevented from receiving credit for work undertaken.

Registration is divided into two equal, but separate processes. Registration materials (the "registration packet") are issued by the Registrar and include cards for payment of the term fees and a Study List Card for requesting enrollment in classes. When fee payment and enrollment are complete, students are considered duly registered and enrolled for the quarter.

Registration by Mail. In advance of the quarter, the registration process may be completed through the mail. All eligible students are encouraged to register by mail. "Registration packets" for currently registered students are available approximately the fifth week of the term in progress. Dates and place of packet issuance are announced in the campus newspaper, the *Daily Bruin* and on official campus bulletin boards. New and reentering students eligible to register by mail (see Calendar) will receive the "registration packet" in the mail from the Registrar approximately six weeks before the quarter begins. Complete instructions and envelopes for return of the cards are included with the registration materials. Each student is responsible for consulting the quarterly *Schedule of Classes* available for purchase in the Students' Store on campus. At the end of the registration by mail process, materials are returned to all students who participated. Students who requested enrollment will receive the results of the enrollment processing, while students who paid their term fees will receive the valid Registration Card (proof of student status for University services). These separate mailings are made approximately 10 days prior to the beginning of the quarter.

Registration in Person. At the beginning of the quarter, in-person processing of fee payment is available for all students not processed by mail. Dates and location of registration in person are announced in the *Schedule of Classes*, the *Registration Circular*, the *Daily Bruin* and on official campus bulletin boards. Students eligible to register by mail are not issued specific times for registration in person, but are advised to observe the registration time recommended in the Registrar's publications. By observing the suggested time schedule for reporting to register, students can complete the registration procedure with a minimal delay. New and reentering students processed for registration in person will be mailed an Appointment to Register in Person by the admitting (or readmitting) officer upon receipt of their Statement of Intent to Register and after classification for tuition purposes is completed from the Statement of Legal Residence. The Appointment to Register in Person is the student's notice of the date, time, and location that the Registrar will be prepared to issue individualized materials for the registration process.

While a combination of both processes (by mail/in person) may be used to pay fees and enroll in classes, the University requires that the full amount of fees be paid by the Friday before instruction begins. If fees are not paid by that date, all course enrollment is dropped and the student must register late.

Any student allowed to register on or after the first day of instruction is subject to a late fee. Late registration with payment of the late fee is accepted during the first 10 days of instruction. Any student who requests registration after the 10th day of classes will be subject to the late registration fee and must submit to the Graduate Division, a memo from his/her major department supporting the late registration and a Study List approved by the authorized departmental adviser.

Graduate students studying out-of-state may make advance arrangements with the Registration Supervisor, 1134 Murphy Hall, regarding the release of registration materials for the duration of their absence.

Continuing students out of the Los Angeles area during the registration packet distribution period may request the packet be mailed by writing to the Registration Supervisor, 1134 Murphy Hall, 405 Hilgard Avenue, Los Angeles, CA 90024. In the request, students must give their full name as it appears on University records, the student ID number, major, address for receipt of the packet, and include $1.00 for postage and handling.

Holds on Registration

Students with outstanding obligations to the University, primarily financial (overdue bills or loan repayments), academic, or administrative will not be allowed to register until such obligations are satisfied.

Enrollment

A student's name is entered on official rolls of the University only after the registration process is complete as published in the *Schedule of Classes*. This quarterly publication is available in June for the Fall Quarter, in November for the Winter Quarter, and in February for the Spring Quarter at the Students' Store, Ackerman Union. It is available by mail and students may write to: Attn: Mail out, ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024; include $1.50 check or money order, payable to ASUCLA.

Enrollment requests are processed by the Registrar's Office from the completed Study List Card contained in the "registration packet." The graduate student files the Study List Card, after obtaining his/her adviser's signature, with his/her major department. Students are assured enrollment in courses offered in their major department as shown on the Study List Card. If a major has recently been changed and is not reflected on the Study List Card, the student must include a copy of the Graduate Division approval. For assured enrollment in restricted or [illegible] closed (enrollment capacity reached) courses outside the major department, an approved "Permission to Enroll Form" must be submitted with the Study List Card.

The approved Study List Card may be filed with the major department during the Registration by mail period or by the third day of instruction. Tentative Study Lists showing the results of the enrollment are mailed at the end of the pre-enrollment period (10 days before the term begins) and/or during the first week of classes. Enrollment changes may be made without fee on the Change in Study List Card through the end of the second week of classes. The adviser's signature is required on the Study List Card and on the Change in Study List Card as it signifies departmental acceptance of the proposed plan of study and assures enrollment in all departmental courses.

A student's Study List of enrolled courses becomes official on the 10th day of instruction. A computer-printed *Official Study List* is mailed to each *registered* student by the Registration/Enrollment Office. A student is responsible for all courses and the grading basis as listed on the Official Study List. To make changes in the Official Study List or to correct any errors or omissions, students must obtain a Change in Study List Petition from the major departmental office. Consult the Calendar for dates and deadlines for study list changes. The quarterly *Schedule of Classes* contains complete information concerning the registration and enrollment process.

Registration Card for Current Quarter

The valid "REG" card is required *with* the Student Photo I.D. Card for all University services. Students should have *both* cards available as proof of identity and student status when requesting service.

If a student has lost, misplaced or not received the "REG" card by the first day of the quarter, a *temporary* (good for five days) Verification of Registration for the current quarter may be obtained without fee at the Registration/Enrollment Office, 1134 Murphy Hall. Proof of identity must be shown before verification is issued.

Lost, destroyed, or mutilated "REG" cards may be replaced for a $3 fee on or after the first day of the quarter at the Registration/Enrollment Office, 1134 Murphy Hall. Proof of identity must be shown before the replacement card will be issued.

Any student with an outstanding obligation to the University, whether financial, academic, or administrative *"Hold"*, will not be issued any proof of registration until all obligations are cleared up by the initiating office.

Student Photo Identification Card

This mandatory student identification card with photo is issued in a student's first quarter of registration and is valid with the current "REG" card as long as the student remains in the same status (undergraduate, graduate, limited). Valid current quarter registration card and supportive identification (e.g., driver's license, passport or California DMV I.D. card) is required of all students at issuance. The student I.D. card and the "REG" card are both required for all University services and student activities.

Consult the registration issue of the campus newspaper, the *Daily Bruin*, for card distribution hours and location. Cards are issued without charge to New or Re-entering students from the first day of registration in person through the first week of classes.

Replacement of lost or destroyed I.D. cards is initiated at 140 Kerckhoff Hall, 8:30 a.m. to 4:30 p.m.; there is a $3 fee.

Continuous Registration

Unless granted a formal leave of absence, or unless eligible for the Filing Fee, graduate students are to register in all three quarters of each academic year, including the quarter in which their degree or certificate is to be awarded. A student must be registered in order to take any University examination with the exception of those, stated in the section below, that are permitted by payment of the Filing Fee.

Registration in the Final Quarter for the Award of the Degree

A student completing courses, using faculty time, library facilities, laboratories, or other University resources, is required to register in the final quarter in which he/she expects to receive his/her degree.

When the award of a degree is expected at the end of a given quarter, but special circumstances over which the student has no control prevent the completion of all requirements before the first day of instruction in the next quarter, a student may petition for a waiver of registration for that quarter. Such petitions must be accompanied by a letter from the Graduate Adviser or Department Chair elaborating the exceptional circumstances of the case. Consideration is necessarily limited to situations in which the faculty delays in reading the thesis or dissertation or in conducting the final examination.

If a student was registered for the preceding quarter and has completed all requirements for a degree in the interval between quarters (before the first day of instruction), he/she is not required to register to receive his/her degree at the end of the following quarter. During the interim between completion of requirements and awarding of the degree, the Registrar's Office will issue, upon request, a Certificate of Completion.

The Filing Fee

If a student has completed, as a registered student, all requirements for a degree except the filing of the thesis or dissertation and/or the final examination (master's comprehensive or doctoral final oral examination), he/she may be eligible to pay a $84.00 Filing Fee during the quarter in which his/her degree is to be awarded instead of registering. Four conditions must be satisfied to be eligible for this fee: (1) All formal requirements for the degree, except for filing the thesis/dissertation and/or taking the master's comprehensive/doctoral final oral examination, must be completed before the first day of classes; (2) Since last being registered and up to the first day of classes, the combined use by the student of University facilities and faculty time must not exceed 12 hours; (3) During the quarter in question, the thesis/dissertation committee suggested *only* stylistic and/or typographical changes in the thesis/dissertation OR, in the case of master's comprehensive examinations, the faculty *only* administered the comprehensive examination; and (4) The student must not be a participant in the doctoral In-Candidacy Fee Offset Grant Program.

To establish eligibility to pay the Filing Fee, the student submits a Filing Fee Application approved by the departmental Graduate Adviser and the chair of his/her thesis committee or doctoral committee certifying that all the above requirements have been met. Forms for this purpose are available in the Student and Academic Affairs Section of the Graduate Division and should be returned to that office after certification and payment of the fee.

A student who pays the Filing Fee is not eligible for the privileges normally accorded regularly registered students, such as the use of University facilities, other than the attention of the faculty necessary for the final reading of the dissertation or thesis and/or the taking of a doctoral final oral exmination or master's comprehensive examination. Students may not use this fee for the purpose of taking coursework of any kind. Students who are fellowship or assistantship holders, aliens with particular visas, or others whose status depends on maintenance of a particular course load are not eligible to use the Filing Fee.

If, after paying the Filing Fee in any one quarter, a candidate should find it necessary to use the educational facilities of the University in any way other than requiring the attention of the faculty sufficient for a final reading of the dissertation or thesis or the taking of a doctoral final oral examination or master's comprehensive examination, he/she must resume registration as a student. If this should occur during a quarter in which he/she has already paid the Filing Fee, the amount of that payment will be refunded. A student who pays the Filing Fee and fails to file his/her dissertation or thesis or who is required to repeat the doctoral final oral examination or master's comprehensive examination must either register as a student or pay an additional Filing Fee in the quarter in which the final requirement for the degree is completed. The Filing Fee will not be refunded because the dissertation or thesis was not filed or the examination not taken or passed.

Full-Time Graduate Program/Normal Progress

Full-time enrollment for graduate students (except Teaching Assistants and Research Assistants) consists of at least two full graduate and/or upper division courses per quarter, or the equivalent of 8 units. Whenever possible, students are encouraged to expedite progress toward degrees by taking an optimal program of three courses per academic quarter.

In order to remain eligible for educational assistance benefits from the Veterans Administration or other direct federal and state subsidies, students are required to maintain normal progress toward their degree objective. Students should consult with their Graduate Adviser to determine the department's appropriate standards of progress. Additionally, students may consult the Office of Special Services, located in Murphy Hall A-253, for information concerning regulations of the Veterans Administration and other governmental agencies that may apply to their graduate studies.

Students enrolled for less than a full program may obtain the appropriate forms from the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall.

Programs for Teaching and Research Assistants and University Administered Fellowship Holders

Teaching and Research Assistants are required to take at least one course per quarter, or the equivalent of 4 units, throughout their appointments. This minimum establishes their full-time enrollment status. During the first quarter of their appointment they may not take more than two courses, or the equivalent of 8 units. If a Teaching or Research Assistant finds it necessary to request a leave of absence or to withdraw, his/her appointment is terminated.

Departmental recommendations for exceptions to these standards must be approved by petition to the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall.

Graduate students holding fellowships administered by the University are required to take at least two courses per quarter, or the equivalent of 8 units, both before and after advancement to candidacy. These courses may be in the 500 series (individual study or research).

Departmental recommendations for exceptions to this policy must be approved by petition to the Fellowship and Assistantship Section of the Graduate Division, 1228 Murphy Hall.

Health Evaluation

All new students and those students reentering after an absence of more than one quarter, who are enrolling in the graduate Schools of Dentistry, Education, Medicine, Nursing, or Social Welfare, must complete and return to the Student Health Service the Health Evaluation form provided to them by their respective departments.

All new and reentering foreign graduate 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.

For information, call (213) 825-4073.

Change of Address

The Registrar should be notified as soon as possible of any change in address that occurs after the return of the student data card from the registration packet. Forms for this purpose are available at the Registration/Enrollment Office, 1134 Murphy Hall. Veterans receiving benefits must also notify the Office of Special Services.

Change of Name

In case of a name change, a name change form is available at Registrar's Window A, Murphy Hall. Any student with a name change should inform all instructors, advisers, etc. of the new name as the Registrar's records will quickly reflect the changed name.

Registration and Other Fees*

All graduate students pay the following fees each quarter at the time of registration, irrespective of the number of courses for which they expect to enroll:

1. A Registration Fee of $168 per quarter, which covers expenses related to use of the library and athletic and gymnasium facilities, as well as such consultations, medical advice, hospital care, or dispensary treatment as can be furnished by the Student Health Service.
2. An Educational Fee of $229 per quarter.
3. An Ackerman Student Union fee of $4 per quarter.
4. A Graduate Students Association membership fee of $2 per quarter.
5. A Wooden Recreation Center fee of $3.25 per quarter.

No part of these fees can be remitted to students who may not desire to use any or all of these privileges, nor is there a reduction for less than full-time enrollment. Refunds on a graduated basis are allowed when students formally withdraw or are approved for leave of absence from the University within the first five weeks of the term. Forms are available in the Student and Academic Affairs Section, Graduate Division, 1225 Murphy Hall. Failure to attend classes, neglect of courses, or stopping payment on checks tendered for registration do not constitute notice of withdrawal. A claim for remission of fees will not be considered unless it is presented during the fiscal year to which the claim is applicable. Information on refunds is published in the quarterly *Schedule of Classes*.

For graduate students the nonresident tuition is $960 per quarter regardless of the number of courses undertaken.

A limited number of waivers of the nonresident tuition ($2,880/academic year) are available each year. They are awarded to graduate students with distinguished academic records by departmental recommendation, until departmental waiver quotas are filled. Applicants must be enrolled in a full-time program of study and may not be recipients of awards from federal, state, or private foundations that provide tuition coverage. The nonresident tuition may not be waived for students financially sponsored by foreign governments. *Note:* Continuing students who the Office of the Registrar's Residence Deputy determines to be eligible for reclassification and who choose not to be so reclassified are not eligible to apply for nonresident tuition waivers.

*Fees are subject to change without notice.

Registration in Absentia

Continuing graduate students who are doing study or research outside the State of California, throughout the quarter, are eligible to register in absentia. Such students will be required to pay only one-half of the $168 Registration Fee, plus all other fees in full. Eligibility for the reduced fee may be requested by petition to the student's major department and the Fellowship and Assistantship Section of the Graduate Division, 1228 Murphy Hall. Forms for this purpose may be obtained at either place.

Residence for Tuition

All entering graduate students and students returning to the University after a period of absence are required to submit a Statement of Legal Residence upon acceptance of admission or readmission. The form will be provided by the admitting office and must be returned with the Statement of Intention to Register. Registration materials cannot be prepared until the residence determination is completed.

Nonresident Tuition Fee

Students who are not classified as residents of the State of California for tuition purposes by the Residence Deputy are charged, in addition to all other fees, a quarterly tuition fee of $960 which is payable with other registration fees. (See Calendar, page vi for deadline.)

Residence for Tuition Purposes at the University of California

Tuition Fee for Nonresident Students

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 the Standing Orders for 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 individual 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 his or her physical presence within this state for one year with objective evidence that such presence is consistent with his or her intent in making 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 his or her 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 indicia which can be relied upon to demonstrate one's intent to make California his or her permanent residence include the following: registering to vote and voting in California elections; designating California as his or her permanent address on all school and employment records, including military records if one is in the military service; 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 established; establishing an abode where one's permanent belongings are kept within California; licensing for professional practice in California; and the absence of these indicia in other states during any period for which residence in California is asserted. Documentary evidence may be required. All relevant indicia will be considered in the classification determination.

Adult Aliens

A student who is an adult alien is entitled to resident classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the U.S. and has thereafter established and maintained residence in California for more than one year immediately prior to the residence determination date.

Nonresident aliens present in the United States under the terms of visa classifications A, E, G, I, or K who can demonstrate California residence for more than one year prior to the term while holding such visa may be entitled to resident classification. Inquiries should be directed to the Residence Deputy.

General Rules Applying to Minors

The residence of the parent with whom an unmarried minor (under age 18) child maintains his/her place of abode is the residence of the unmarried minor child. The residence of an unmarried minor who has a parent living cannot be changed by his/her own act, by the appointment of a legal guardian, or by the relinquishment of a parent's right of control. When the minor lives with neither parent, residence is that of the parent with whom the student maintained the last place of abode. 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. **Minor Aliens.** A student who is a minor alien shall be entitled to resident classification if the student and the parent have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the U.S., provided that the parent has had residence in California for more than one year after admission to permanent residence prior to the residence determination date for the term applicable.

2. **Divorced/Separated Parent Situations.** The student must move to California to live with the California resident parent while the student is still a minor (before his or her 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 his or her legal residence.

3. **Parent of Minor Moves from California.** A student who remains in the state after his or her parent, who was theretofore 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 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.

4. **Self-Support.** Nonresident students 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.

5. **Two Year Care and Control.** A student shall be entitled to resident classification if immediately prior to the residence determination date, he or she has 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

6. **Member of the Military.** A student who is a member of the United States military stationed in California on activity duty, except a member of the military assigned for educational purposes to a state-supported institution of higher education, may be exempted from the nonresident tuition fees until he or she has resided in the state the minimum time necessary to become a resident. He/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 educational purposes and must include the dates of assignment to the state.

7. **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 (1) the member of the military is transferred on military orders to a place outside this state where he or she continues to serve in the armed forces or (2) the member of the military retires from active duty immediately after having served in California on active duty, the student shall retain this exemption under conditions set forth above.

8. **Child or Spouse of Faculty Member.** The unmarried, dependent child under age 21 or the spouse of a member of the University faculty who is a member of the Academic Senate may be eligible for a waiver of the nonresident tuition fee. Confirmation of the faculty member's membership on the Academic Senate shall be secured each term before this waiver is granted.

9. **Child of University Employee.** The unmarried, dependent child under age 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.

10. **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 from the state. 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 obligation. It should be noted that 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 the time prescribed by law. i.e., within 10 days for the driver's license and within one year or when registration expires (whichever comes first) for vehicle registration.

Reclassification Petitions

Student *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. In addition to the criteria listed above, a student seeking reclassification must be financially independent of parents domiciled outside of California. For detailed information regarding reclassification, contact the Residency Deputy.

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

For inquiries regarding residence requirements, determination, and/or recognized exceptions, please consult the Campus Residence Deputy, Office of the Registrar, 1134 Murphy Hall, 405 Hilgard Avenue, Los Angeles, CA 90024; telephone (213) 825-3447 or the Legal Analyst — Residence Matters, 590 University Hall, 2200 University Avenue, 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 regulations adopted by the Regents of the University of California is available for inspection in the Registrar's Office. 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 120 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 is required (by the authority of Standing Order 110.2 (a)-(d) of the Regents of the University of California) for determining whether or not you are a legal resident for tuition purposes. Your registration cannot be processed without this information. The Office of the Registrar on campus maintains the requested information. You have the right to inspect University records containing the residence information requested on this form.

Cancellations/Withdrawals

Cancellation of Registration

Prior to the first day of instruction, a student may cancel his/her registration upon written notice and return of the student photo I.D. card and current Registration card to the Registration/Enrollment Office, 1134 Murphy Hall. A service charge of $10 is deducted from the amount of fees paid.

Withdrawal

A student withdrawing from the University during the course of a quarter must file an acceptable "Notice of Withdrawal" and return the student photo I.D. card and current Registration card. Failure to return the photo I.D. card and current Registration card will result in a $15.25 deduction from any refund. The withdrawal form containing complete instructions is issued at the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall or Registrar's Information Window "A", Murphy Hall. Failure to attend classes, neglect of courses, or stopping payment on checks tendered for registration do not constitute notice of withdrawal.

With approval of the Dean of the Graduate Division, a student who is eligible for further registration in the University and who is not under disciplinary disqualification is entitled to a statement of honorable withdrawal. However, the Dean may attach comments to this statement.

A registered student who withdraws from the University before the end of the quarter without authorization duly certified by the Registrar shall receive a grade of "F" or, where appropriate, "Unsatisfactory" in each course in which he/she is enrolled.

A percentage of the registration fees paid is refunded according to the calendar date on which the official notice of withdrawal is submitted to the Registrar. See current *Schedule of Classes* for refund schedule.

A student who completes a quarter and fails to register or take a leave of absence for the following quarter is presumed to have withdrawn from the University. If such a student wishes to register for a subsequent quarter, he/she will be required to be readmitted to the Graduate Division. (See page 17 for Readmission procedures.)

Refunds

Refund Procedures

The Schedule of Refunds listed below refers to *Calendar days, beginning with the first day of instruction* (Day 1). *Percentages listed* (Days 1-35) should be applied respectively to each Tuition, Educational Fee, University Registration Fee, and other student fees. The effective date for determining a refund is the date the student files his/her official notice of withdrawal with the University, and it is presumed that no University services will be provided to the student after that date. Students are required to return their valid Registration card and photo I.D. card or $15.25 will be deducted from any refund.

No claim for refund will be considered unless presented within the fiscal year to which the claim is applicable.

All Continuing, Readmitted and New Graduate Students (Except Medicine and Dentistry Students)

There is a service charge of $10 for cancellation of registration before the first day of instruction. Beginning with the first day of instruction, the Schedule of Refunds (see below) is applied to the total of fees assessed.

Medicine and Dentistry Students

Prior to the first day of instruction, the fees that have been paid are refunded in full, except for the Deposit.

Day 1 and after the Deposit is withheld from the fees assessed and the Schedule of Refunds (see below) is applied to the balance of the fees assessed.

In the case of continuing students, the Schedule of Refunds is applied to the total of the fees assessed.

Schedule of Refunds*

This schedule applies to the procedures described above.

1-14 days	15-21 days	22-28 days	29-35 days	36 days and over
80%	60%	40%	20%	0%

The Schedule of Refunds refers to calendar days, beginning with the first day of instruction. Specific refund dates may be found in the current *Schedule of Classes* (published each quarter).

Penalty Fees

Late Registration

Students who are not registered (fees paid) before the first day of instruction may register with an additional $50 late fee during the first 10 days of classes. Each registrant reports to the Registrar's Office, Window Q, 1134 Murphy Hall, for clearance to register. Late registration is processed from 8:30 a.m. to 5:00 p.m., Monday through Friday.

*If no credit for courses is received, a full refund of the Registration Fee of the regular session will be granted to all students entering the armed forces prior to the 6th week of the quarter. No refund thereafter.

Lapse of Status

Failure on the part of any student to meet certain obligations may result in lapse of his/her status until such time as the obligation has been discharged and his/her status restored. A student's status may be lapsed for failure to: settle financial obligations when due, or make satisfactory arrangements with the Cashier if payment cannot be made; or respond to official University notices.

A student whose status is lapsed is not entitled to any University services except assistance toward reinstatement.

If such action becomes necessary, a petition for reinstatement is submitted to the agency recommending lapse of status; if approved, the petition is then submitted to the Registar's Office with a $10.00 fee for reinstatement. Reinstatement is not official until the student's petition has been approved by the lapsing agency and filed with the Registrar's Office.

Late Payment of Fees

All requests which are an exception to a published deadline or retroactive to a previous quarter will be subject to a PENALTY fee of $10.00 in addition to the normal processing fee.

Third Party Fee Payment

The University assumes no contractual or other obligation to any third party who pays any University fees on behalf of a student unless the University has expressly agreed thereto in writing. In this regard, no request for a refund of fees by such a third party will be honored, and if the student withdraws from the University with a refund due, such refund will be paid to the student.

List of Fees for Graduate Students*

Application for admission/readmission/leave of absence (nonrefundable)	$ 25.00
First renewal of application for admission	none
Second renewal of application for admission	$ 25.00
Registration fee	$168.00 per quarter
Educational fee	$229.00 per quarter
Student Union fee	$ 4.00 per quarter
Wooden Recreation Center fee	$ 3.25 per quarter
Graduate Students Association fee	$ 2.00 per quarter
Nonresident tuition, if applicable	$960.00 per quarter
Reinstatement after lapse of status	$ 10.00
Late Registration, when permitted	$ 50.00
Fee for duplicate registration materials (each order)	$ 3.00
Fee for duplicate Registration card	$ 3.00
Late filing of Study List, when accepted	$ 50.00
Petition to ADD Classes to Study List	$ 3.00
(Total with penalty fee after 5:00 p.m. of last day)	$ 13.00
Petition to Change Credit Detail (Satisfactory/ Unsatisfactory or letter grade)	$ 3.00
(Total with penalty fee after 4:00 p.m. of last day)	$ 13.00
Graduate petition to DROP courses from Study List	$ 3.00
(Total with penalty fee after 4:00 p.m. of last day)	$ 13.00
Withdrawal without submitting valid Registration Card and Photo I.D. Card (deducted from refund)	$ 15.25
Credit by Examination per petition	$ 5.00
Transcript of record, one copy ($1.00 each additional copy ordered at the same time)	$ 3.00
Removal of I grade, each petition	$ 5.00
Foreign language examinations, Educational Testing Service, each examination	$ 20.00
Candidacy for doctoral degree (Advancement to Candidacy fee)	$ 25.00
Reinstatement of doctoral candidacy, if applicable	$ 25.00
Candidacy for master's degree	none
**Doctoral dissertation copyright fee, optional	$ 20.00
Filing fee, if applicable	$ 84.00
Certificate of completion (limit 3)	none
Certificate of resident study, foreign students	none
**Academic apparel rental fee, for participants in Commencement, plus refundable $5 deposit	
Master's candidates	$ 16.00
Doctoral candidates	$ 18.00
Refundable deposit on academic apparel	$ 10.00
Duplicate diploma (replacement cost upon presentation of evidence original is lost or destroyed) (Law, Medicine, Dentistry)	$ 38.00
(Except Law, Medicine, Dentistry)	$ 25.00
Diploma mailing fee, optional ($6.00 abroad)	$ 3.00
Returned check collection	$ 5.00
Late application for teaching assignment	$ 1.00
Failure to empty locker within specified period	$ 5.00
***Late return of athletic supplies (For each 24 hours until full purchase of article is reached).	$ 1.00

*All fees are subject to change without notice.
***Note:* These fees are payable as follows: for copyright of doctoral dissertations, excess words in abstract, abstract reprints and/or positive films (when applicable), to University Microfilms Library Service, Xerox Corporation, Ann Arbor, Michigan; for academic apparel rental to ASUCLA.
***Supplies or equipment not returned before the close of the fiscal year must be paid in full; return after that date is not permitted.

Additional Fees Where Applicable

Candidacy Fee

There is a $25 Advancement to Candidacy Fee for all doctoral degrees. No student can be formally advanced to candidacy without payment of this fee. There is no graduation fee at UCLA.

The Filing Fee

Candidates who have fulfilled all requirements for the degree except for the filing of the dissertation or thesis and/or taking of a doctoral final oral

examination or master's comprehensive examination may establish eligibility to pay the $84.00 *Filing Fee in lieu of the Registration and Educational Fees* (and the Nonresident Tuition Fee, where applicable). This fee and the conditions under which it may be used are described more fully on page 24.

Optional Health Service Fee

During an unregistered academic quarter, graduate students who present official written confirmation of current sponsorship and continuing degree candidacy for that quarter from a faculty adviser or department chair, may obtain the benefits of the Student Health Service on either a Fee-for Service basis, or by pre-payment of the Optional Health Service Fee. During the academic year, this fee must be paid within 30 days of the first day of the quarter. Any continuing student, not registered during the summer sessions, but wishing to use the Student Health Service, may elect to pay the Optional Health Service Fee within 30 days of the first day of the First Summer Session or, if purchasing the Optional Health Plan for the Second Summer Session only, within 14 days of the first day of the Second Summer Session.

In all cases when the SHS Optional Health Plan is purchased, the student's eligibility for services at Student Health begins either on the date of purchase or on the first day of the appropriate quarter/session, whichever is later.

Rental Fee for Caps, Gowns, and Hoods

Academic regalia for Commencement exercises is reserved in the UCLA Academic Apparel Service, third floor, Ackerman Union. The rental fee is $16.00 for master's candidates, $18.00 for doctoral candidates. For further information, consult the *Commencement Handbook,* available free at the Information Desk, Student Union, and at the Campus Studio, 150 Kerckhoff Hall. Graduation announcements may be purchased at the Campus Studio.

Diplomas

Diplomas are not distributed at Commencement. During the period between final checking of degrees and the distribution of diplomas, a Certificate of Completion is sent to every student entitled to receive a diploma. Recipients are notified when their diplomas are available at the Registrar's Office, Information Window "A," Murphy Hall. There is no diploma fee. Upon request, diplomas are sent to the student by certified mail, with a mailing charge of $3.00 ($6.00 abroad).

Petitions

There are three kinds of petitions used by graduate students (1) Request for Granting of Incomplete Grade (no fee); (2) Petition for Removal of Grade I (fee, $5 per petition); and (3) Petition for Change in Study List, also known as a "drop-add" petition (fee, $3 per petition). These forms may be obtained from the student's department.

Transcripts of Record

Transcripts will be issued upon application to the Registrar at a cost of $3.00 each; $1.00 for each additional copy ordered at the same time. Transcripts showing final grades normally cannot be issued earlier than three to six weeks after the end of the quarter. Those showing a degree earned during the quarter cannot be issued earlier than six to eight weeks after the end of the quarter.

Grades

An unofficial copy of a student's record is available (without charge) quarterly (approximately four weeks after the end of the quarter) at the Registrar's Information Window "A," Murphy Hall. This copy of the student grade report may be mailed if a student deposits a stamped, self-addressed envelope in the labeled box near Window "A."

Students who must have earlier confirmation of grades may leave a postcard with each instructor at the time of the final examination. Students should pick up their grades each quarter (even if postcards are sent) to check for errors or omissions.

Change of Major

A continuing graduate student may petition for a change of major after discussing his/her plans with his/her "new" department. Forms for this purpose are available in the Graduate Division, Student and Academic Affairs Section, 1225 Murphy Hall, and should be returned to that office.

Deadlines for this petition generally are the same as those for the graduate admissions procedure but students should also consult with and be guided by the departments before filing an application.

The student must be coded in the major in which he/she is to receive his/her degree at the time the degree is awarded. Also, enrollment is processed by college/major codes on the registration materials unless a copy of the approved major change is filed with the Study List Card.

Leaves of Absence

Only persons who are registered are entitled to the use of University facilities (an exception is the Library, to which the public-at-large has access if a fee is paid) or faculty time. A student who is anticipated to use as much as 12 or more hours of University facilities and/or faculty time (excluding the Library) in any quarter, is not eligible for a leave of absence or an extension of a leave of absence and must register. A student who has accumulated as much as 12 or more hours of use of University facilities and/or faculty time (excluding the Library) since last being registered is not eligible for an extension of a leave of absence and must register for the next quarter. All usages of faculty time are to be considered, including reading and suggesting revisions to drafts of theses and dissertations.

On recommendation of the student's department and subject to the conditions stated in the paragraph above, a leave of absence may be granted by the Graduate Division to continuing graduate students in good standing (3.0 g.p.a.), who have completed at least one quarter in graduate status at UCLA. "Request for a Leave of Absence" forms are available at the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall. If registration fees have been paid for the quarter in which the leave is to begin, a percentage of the fees paid is refunded according to the calendar date on which the approved leave request is submitted to the Graduate Division. All leaves must be requested before the end of the second week of class of the quarter in which the leave of absence or extension of leave of absence is to begin. Deadlines are published for each quarter in the *Graduate Catalog* (see Calendar, page vi) and in the quarterly *Schedule of Classes.*

A leave is normally granted for periods of one to three quarters. Leaves may be extended for a total of five years (15 quarters) at the request of the student, on the recommendation of the department involved, and with the approval of the Graduate Division. Students wishing to return to their graduate studies after a period of five years must apply for readmission to the Graduate Division. If a student can demonstrate that the process of applying for annual renewals of leave would be exceedingly difficult, the Graduate Division, upon the recommendation of the student's department, may grant a leave of absence for a period of more than one year.

Chairs of doctoral committees will be asked by the Graduate Division to verify that students applying for leaves or extensions of leaves will not be using University facilities or faculty time while on leave in accordance with the policy in paragraph 1.

A student granted a leave for any period of time may not keep a fellowship, grant, or salaried appointment to any apprentice teaching or research title. Furthermore, the granting of a leave of absence does not relieve a student from meeting the requirements for the degree as they were stated in the catalog published and in effect at the time the student first registered as a graduate student at UCLA.

Application for a leave of absence to accept University employment must be accompanied by a letter from the Department Chair or other employing officer elaborating the reasons for which the leave is requested. In supporting such a request, the employing unit is obligated to demonstrate that such employment is essential to its program, that the depart-

mental need results from an unforeseen circumstance, and that employment is for a specified and limited period of time.

Graduates scheduled to return from a leave of absence will be mailed preliminary information about registering by the Readmission Clerk, Office of the Registrar, 1105 Murphy Hall, along with the Statement of Intention to Register. The intention to register materials must be returned not less than six weeks before the first day of the quarter or the student may be assessed a late registration fee.

A student returning before the end of the period of his/her leave should notify the Registrar at least six weeks prior to the beginning of the quarter in which he/she plans to register, so that his/her registration packet may be prepared in advance. Failure to give at least six weeks notice will result in liability for any and all late registration/late enrollment fees assessed by the Registrar.

A request for extension of a leave of absence should be addressed in writing to the Student and Academic Affairs Section, Graduate Division, which will send the student an extension of leave of absence request form.

Leaves of Absence for Foreign Students

In addition to general Graduate Division regulations cited above, leaves of absence for foreign students holding J-1 or F-1 visas are allowed only under the following conditions: if they will be out of the United States during the term of their leave of absence; if they have just completed an academic program or degree and wish to gain practical training in their field before resuming their studies; if they are writing a thesis or dissertation during the period for which the leave is requested; or if serious illness prevents attendance. All non-immigrant foreign students, including those who have permanent residence, must have their applications for leave of absence approved by the Office of International Students and Scholars.

Graduate Student Complaints

Because of the separation of functions within the University, it is sometimes unclear to students where they should direct their complaints. The following information may be helpful in advising students who wish to do so. Graduate students with complaints of a scholastic or professional character involving faculty, should take them up with the faculty member concerned or, if that is not feasible, with the Chair of the Department. If the Chair of the Department as a whole is involved, the matter should be taken to the appropriate Divisional Dean; or to the appropriate dean in the School concerned.

If the issue is not resolved at that level, the student may appeal to the Dean of the Graduate Division, 1237 Murphy Hall.

A graduate student or a group of graduate students wishing to lodge a complaint of a misconduct against another student or group of students, should go to the Office of the Dean of Students, 2224 Murphy Hall.

Graduate students who wish to make complaints concerning alleged violation of the policies and regulations governing graduate study, should see the Dean or Associate Dean of the Graduate Division, 1237 Murphy Hall.

A student who wishes to complain about a violation of University policy regulating the individual conduct of a faculty member should contact the Charges Committee of the Academic Senate, 3125 Murphy Hall.

The Ombudsman

The purpose of the Ombudsman Office is to seek to resolve personal grievances of members of the University community emerging from policy, practices, and/or personalities. As an independent agent with investigatory powers, the Ombudsman accepts grievances only after the grievant has tried to resolve his/her problems through regular channels and when there is evidence that adverse decisions are questionable.

The Ombudsman also serves on the University Policies Commission which reviews and recommends policy changes. The office is located in 274 Kinsey Hall (phone 825-7627) and is open to all University-related persons on a confidential basis.

Certificate of Resident Study for Foreign Students

In addition to a formal transcript, a Certificate of Resident Study may be issued to a registered foreign student as evidence of resident study. A candidate for this certificate must have completed a minimum program of nine courses, with a grade average of no less than C, or have satisfactorily completed a research project over a period of nine months or more. The award of this certificate is recommended by the chair of the student's major department. Request for the Certificate of Resident Study should be made to the Registrar at least a week prior to the opening of the final examination period.

Verification of Progress and Completion

The Registrar's Office provides official records of a student's academic progress, completion of requirements, and degree award, for the information of prospective employers and loan agencies and for other purposes, as follows:

On a signed request from the student, transcripts of record are issued at a cost of $3.00 for all undergraduate and graduate work completed at UCLA. Transcripts showing final grades cannot be issued earlier than three to six weeks after the end of the quarter; those showing a degree earned during the quarter cannot be issued earlier than six to eight weeks after the end of the quarter.

A Certificate of Completion is issued to all students approximately three to four weeks after the end of the quarter in which they complete all degree requirements, certifying their eligibility for the degree. A Certificate of Graduation, issued only on individual student requests, certifies award of the degree in lieu of the diploma (which is ordinarily not available until approximately four to five months after official award of the degree).

If students request the chair of their department or of their thesis or doctoral committee to supply letters of recommendation and/or information on progress in examinations or preparation of the thesis or dissertation, this statement does not serve as official confirmation of completion of all requirements Such a statement does not take into account the effect of incomplete grades, lapse of status, or disciplinary actions on students' eligibility for the degree.

Student requests for degree or Certificates of Graduation should be submitted at Window A, Registrar's Office, or may be mailed to that office.

The Registrar's Office, Verification Window "E", Murphy Hall, will be able to verify current quarter registration and full time enrollment status for loan forms (and various non-campus certifications) beginning with the 12th day of classes. Valid photo identification is required for service. Hours are 8:30 a.m. to 5:00 p.m., Monday through Friday.

Temporary verification of current quarter registration for campus use is available at the Registration/Enrollment Office, 1134 Murphy Hall on or after the first day of the term. Identification is required for service.

Requests for verification to be issued for prospective employers or other agencies should be addressed to the Registrar.

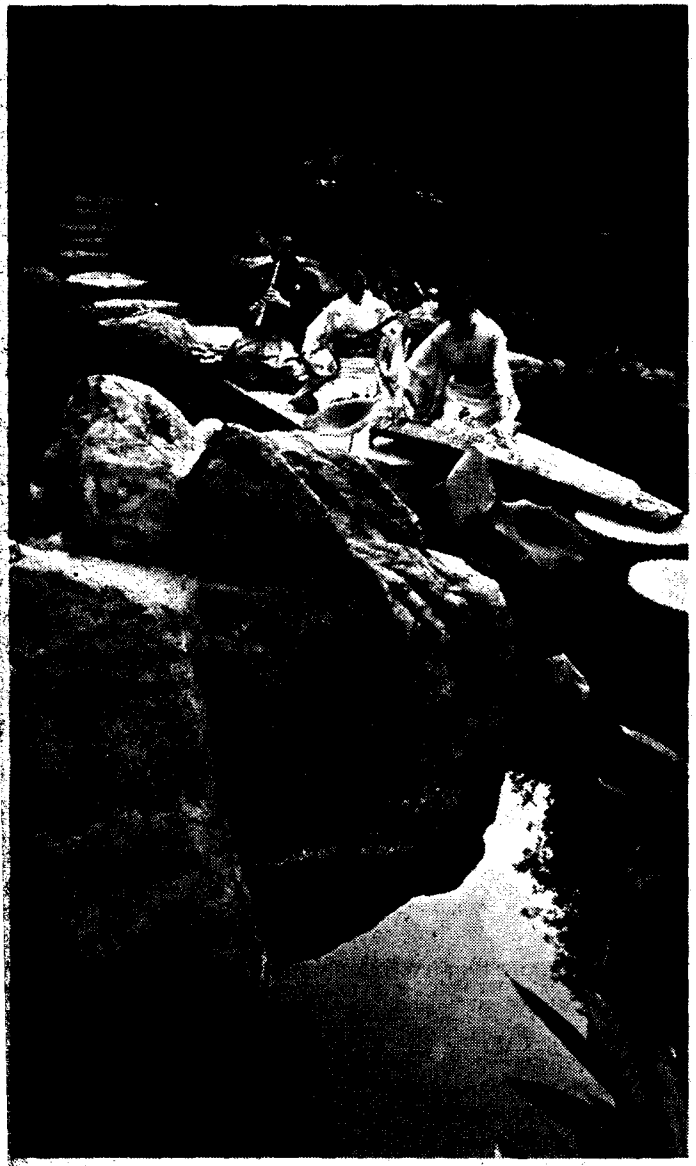
Disclosure of Information from Student Records

Pursuant to the Federal Family Educational Rights and Privacy Act of 1974 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 Act and the University Policies; 2) to have withheld from disclosure, absent their prior consent for release, personally identifiable information from their student records, except as provided by the Federal Act 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; 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 student data card in the registration packet, 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 Act and the University Policies may be maintained in a wide variety of offices. Students are referred to the UCLA 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 Federal Act and the University Policies.

A copy of the Federal Act, the University Policies and the UCLA Directory may be inspected in, and information concerning these matters and the students' hearing rights may be obtained from the Office Legal Coordinator, 2135 Murphy Hall.



Degrees and Requirements

The graduate student earns his/her master's or doctoral degree by distinguished achievement in advanced study and research, rather than by merely completing stipulated courses while in academic residence. There are various means of evaluating his/her achievement in study, of which the foremost are qualifying and comprehensive examinations. Assessing the merits of his/her thesis or dissertation is the chief way of evaluating his/her achievement in research.

Preparation

An applicant for any advanced degree must possess a bachelor's degree from an institution of acceptable standing and must have completed the prerequisites for graduate study at UCLA in his/her field. He/she should consult the department in which he/she wishes to study concerning special departmental requirements or other aspects of graduate study in addition to those common to all UCLA graduate programs which are described in this catalog.

Master's Degree

Plan

At the option of his/her major department, the student follows either the Thesis Plan or the Comprehensive Examination Plan. The University minimum standards are the same under either plan, but a department may set higher standards and require additional courses and/or examinations to evaluate the candidate's capability in his/her field. The departmental Graduate Adviser should be consulted concerning such requirements. Information regarding standards and examinations may also be found in the Graduate Programs section of this catalog which lists the individual school and department degree requirements.

University Minimum Standards

Courses *

The program of courses consists of at least nine graduate and upper-division courses completed in graduate status, of which at least five must be graduate. For the M.A., M.S., and M.A.T. (Master of Arts in Teaching), the five graduate courses may be in the 200 series (graduate courses and seminars) and, in limited number, the 500 series (directed individual study or research for graduate students). For other master's degrees, they may be in the 400 series (graduate professional courses) as well as the 200 and 500 series. (See also Individual Study or Research Courses, page 20)

Standard of Scholarship

UCLA requires at least a B (3.00) average in all courses taken in graduate status on any campus of the University of California and in all courses applied toward the master's degree.

Transfer of Credit

Units and grade points for courses completed in graduate status on other University of California campuses may, upon petition, apply to master's programs at UCLA. Such courses may fulfill up to one-half the total course requirement, one-half the graduate course requirement, and one-third the academic residence requirement.

Also by petition, with the approval of the student's major department and the Dean of the Graduate Division, courses completed with a minimum grade of B in graduate status at institutions other than the University of California may apply to UCLA master's programs. A maximum of two such courses (the equivalent of 8 quarter-units or 5 semester-units) may apply, but these courses will not fulfill either the 5-graduate-course requirement or the academic residence requirement. (See also Enrollment in Summer Session Courses, page 17.)

Courses taken for any degree awarded at another institution may not be used to apply toward a degree at UCLA.

*Under the quarter system at UCLA, the term "course" refers to a full course (4 quarter-units). With this as a standard, departments may offer a half course (2 quarter-units), a course and a half (6 quarter-units), or a double course (8 quarter-units). The requisite 9-course minimum for a master's degree may be fulfilled through combinations of such courses.

Credit for University Extension Courses

University Extension courses (100 series) taken *before* July 1, 1969 (identified with an asterisk in the University Extension bulletin of the appropriate year), may apply on approval by the department and Dean of the Graduate Division. No more than two such courses (8 units) may apply, and they must have been completed after the student received his/her bachelor's degree.

Courses in University Extension taken *after* July 1, 1969, may not apply to the University minimum of nine courses required for master's degrees, with the following exception. By petition to the Dean of the Graduate Division and with the recommendation of the major department, a maximum of two concurrent** courses (100, 200, or 400 series) completed through the University Extension, (with a grade of B or better, after the student has received his/her bachelor's degree) may be counted toward the 9-course University minimum requirement and toward the 5-graduate-course requirement for the master's degree. Therefore, the program for the master's degree shall include at least three graduate courses in the 200 or 500 series for academic degrees or three graduate courses in the 200, 400, or 500 series for professional degrees, completed after admission to regular graduate status.

Any program which requires more than nine courses for the master's degree may accept concurrent courses completed through Extension, (with a grade of B or better, after the student has received his/her bachelor's degree) to meet one-half the course requirements over and above the University minimum of nine.

Grades earned in University Extension are not included in computing grade averages for graduate students nor for the removal of graduate scholarship deficiencies.

Correspondence courses are not applicable to graduate degrees.

Academic Residence

The student is required to complete at least three quarters of academic residence in graduate status at the University of California, including at least two quarters at UCLA. He/she is in academic residence if he/she completes at least one course (4 units) in graduate or upper-division work during a quarter.

Foreign Language

If the degree program includes a foreign language requirement, every effort should be made to fulfill this before the beginning of graduate study or as early as possible thereafter so that the language skill will be of maximum benefit. Additional information and a list of departmental foreign language requirements, including, in certain cases, language requirements for admission, appear on pages 40-43.

**Concurrent courses are courses which are offered by the University for regularly registered students in degree programs, and in which Extension students also may petition to enroll.

Advancement to Candidacy

Advancement to candidacy forms for the master's degree must be filed in the student's major department no later than the second week of the quarter in which he/she expects the award of his/her degree. However, advancement to candidacy may not occur until all requirements, including the foreign language examination, have been satisfied. Forms for this purpose are available in the Student and Academic Affairs Section of the Graduate Division. Petitions and transcripts pertinent to the master's program should accompany the advancement to candidacy form. Candidates may have one calendar year from date of advancement to candidacy in which to complete all requirements for the degree. Any change in program after filing for advancement to candidacy should be reported in writing to the Registar's Office by the Department Chair or Graduate Adviser.

Thesis or Comprehensive Examination

Master's Thesis

The student's thesis is a report on the results of his/her original investigation. Before beginning work on the thesis, the student obtains approval of the subject and general plan from the faculty members concerned and from his/her thesis committee.

The thesis committee is nominated by the chair of the department or interdepartmental degree committee, after consultation with the student. The "Nomination of Thesis Committee" form is forwarded to the Dean of the Graduate Division who officially appoints the committee. The thesis committee may be appointed before the student is formally advanced to candidacy.

The thesis committee consists of at least three faculty members who hold regular professional appointments in the University of California — professors, associate professors, assistant professors, visiting professors (all ranks), and professors-in-residence (all ranks). Acting assistant professors, adjunct professors (all ranks), and lecturers who teach graduate courses may serve as regular members but not as chairs. Adjunct professors (all ranks) and distinguished lecturers may serve as chairs only on approval by the Dean of the Graduate Division. UCLA graduate students who hold faculty titles may not serve on master's thesis committees.

For guidance in the final preparation of the manuscript, the student should consult the Manuscript Adviser, Office of the University Archivist, 134 Powell Library, and the Graduate Division publication, *Standards and Procedures for Theses and Dissertations,* available in the Student and Academic Affairs Section or in the Archivist's office. Students planning to submit theses during the current academic year are encouraged to attend one of the orientation meetings on manuscript preparation and filing procedures which are conducted by the Manuscript Adviser and the Graduate Division at the beginning of each quarter. Orientation meeting dates are listed in the Calendar, page vi, and announcements are posted each quarter in departmental offices and libraries.

The manuscript may be submitted in the form of either camera-ready copy for microfilming or paper copies for binding, when departmental requirements do not conflict. Sufficient time should be allowed for typing and proofreading the manuscript, drafting charts, maps, and graphs, arranging for photographic work, and making final revisions and corrections. If approved by the thesis committee, reports of research undertaken during graduate study which have been published or accepted for publication in appropriate media may be accepted by the Dean of the Graduate Division as the master's thesis.

When the student's thesis has final approval by his/her thesis committee he/she submits the original thesis signature (approval) page and the original title page to the Student and Academic Affairs Section, Graduate Division, for verification of completion of the degree requirements. After final approval by the Dean of the Graduate Division, the student files with the Manuscript Adviser one or more copies of the thesis, in accordance with the number required for the method of manuscript preparation he/she has followed (complete instructions are included in the publication cited above). Students are urged to keep the abstract of the thesis within the 150-word limit. The deadline for filing the thesis is approximately two weeks before the date when the degree is to be awarded (see Calendar, page vi).

See also the section, Registration in the Final Quarter for the Award of the Degree, page 24.

Master's Comprehensive Examination

The comprehensive examination is administered by a committee consisting of at least three faculty members appointed by the department. Information concerning this examination and its form (written or oral, or both) may be obtained from the departmental Graduate Adviser. In some departments the comprehensive examination may serve as a screening examination for admission to their doctoral programs. (See Registration in the Final Quarter for the Award of the Degree, page 24.)

Master's Degrees Other Than The M.A. and M.S.

For master's degrees other than the M.A. and M.S. there may be specific University minimum requirements in addition to the foregoing. Information on these may be obtained from the departmental Graduate Adviser.

The Master of Arts Degree Is Offered In the Following Fields

African Area Studies
Afro-American Studies
American Indian Studies
Anthropology
Archaeology
Architecture and Urban Planning
Art
Art History
Asian American Studies
Astronomy (M.A.T.)*
Biology
Classics
Comparative Literature
Dance
Economics
Education
English
Folklore and Mythology
French
Geography
German
Greek
History
Islamic Studies
Italian
Latin
Latin American Studies
Linguistics
Luso-Brazilian Language and Literatures
Mathematics
Mathematics (M.A.T.)*
Microbiology
Music
Near Eastern Languages and Cultures
Oriental Languages
Philosophy
Physics (M.A.T.)*
Political Science
†Psychology
Romance Linguistics and Literature
Scandinavian
Slavic Languages and Literatures
Sociology
Spanish
Teaching English as a Second Language
Theater Arts

The Master of Science Degree Is Offered In the Following Fields

Anatomy
Astronomy
Atmospheric Sciences
Biochemistry
Biological Chemistry
Biomathematics
Biostatistics
Chemistry
Computer Science
Engineering
Experimental Pathology
Geochemistry
Geology
Geophysics and Space Physics
Kinesiology
Management
Medical Physics
†Microbiology and Immunology
Nurse Anesthesia
Oral Biology
†Pharmacology
Physics
†Physiology
Preventive Medicine and Public Health
Public Health

*Master of Arts in Teaching
†Department admits only applicants whose objective is the Ph.D.

A Professional Master's Degree Is Offered In the Following Fields

Architecture (M.Arch.)
Art (M.F.A.)
Education (M.Ed.)
Engineering (M.Engr.)
Library and Information Science (M.L.S.)
Management (M.B.A.)
Music (Performance Practices) (M.F.A.)
Nursing (M.N.)
Public Health (M.P.H.)
Social Welfare (M.S.W.)
Theater Arts (M.F.A.)

Candidate in Philosophy Degree

In those departments for which the Graduate Council has approved formal proposals for its award, the intermediate degree, Candidate in Philosophy (C.Phil.), may be awarded to qualified students upon advancement to candidacy in existing Ph.D. programs.

The C.Phil. is not a terminal degree. This means that a department cannot recommend a student for advancement to doctoral candidacy and at the same time disqualify him/her for continued registration and further study or research on his/her dissertation. If a student withdraws from the University after advancement to candidacy and award of the C.Phil., then the department must be willing to readmit him/her at some subsequent date, provided the period of absence has not exceeded the maximum time limit which the department has officially set with the Graduate Division

between advancement to candidacy and the award of the Ph.D. Any student, of course, may decide not to proceed beyond the C.Phil. degree.

Academic requirements for the C.Phil., like those for advancement to candidacy for the Ph.D., include the departmental program of study, the written, and in some departments, oral qualifying examinations, such foreign language (or substitute program) requirements as the department has established as prerequisite to advancement to candidacy, and the oral candidacy examination which is administered by the doctoral committee.

The academic residence requirement consists of four quarters in academic residence, three of which (ordinarily the last three) must be spent in continuous residence at UCLA. (See also academic residence requirements for doctoral programs, page 34.)

Students in departments authorized to offer the C.Phil. may state on the doctoral advancement to candidacy form whether they wish this degree.

The C.Phil. may not be conferred after or simultaneously with the award of the Ph.D.

Students in the Ph.D. programs should consult their departmental Graduate Advisers for further information. (See also the section, Registration In the Final Quarter for the Award of Degree, page 24.)

The Candidate in Philosophy Degree Is Offered In the Following Fields

Anatomy
Applied Linguistics
Atmospheric Sciences
Biochemistry
Biology
Chemistry
Classics
Comparative Literature
Economics
English
French
Geochemistry
Geography
Geology
Germanic Languages
Hispanic Languages and Literatures
History
Indo-European Studies
Islamic Studies
Italian
Linguistics
Management
Mathematics
Music
Near Eastern Languages and Cultures
Oriental Languages
Philosophy
Political Science
Psychology
Romance Linguistics and Literature
Slavic Languages and Literatures
Sociology
Theater Arts

Doctoral Degree

The doctorate is awarded candidates who have displayed understanding in depth of the subject matter of their discipline as well as ability to make original contributions to knowledge in their field. The degree is an affidavit of critical aptitude in scholarship, imaginative enterprise in research, and proficiency and style in communication.

University Minimum Standards

Program of Study

The student's program of study is planned in consultation with his/her adviser and/or departmental guidance committee, who supervise his/her activities until the appointment of his/her doctoral committee. This program, designed with flexibility for individual needs and interests, lies within the scope of the departmental or interdepartmental program which has been approved by the Graduate Council. The student fulfills formal University requirements for scholarship, academic residence, foreign language proficiency, written and, in some departments, oral qualifying examinations, an oral candidacy examination, and the dissertation, as well as any additional departmental requirements. The University does not specify course requirements for doctoral programs, and the doctoral student completes such courses as his/her department may require or recommend for knowledge in his/her field and for preparation for qualifying examinations. The 500 series of directed individual study or research courses is designed for graduate research, preparation for examinations, and preparation of the dissertation.

Standard of Scholarship

UCLA requires at least a B (3.0) average in all courses taken on any campus of the University of California for the entire time the student has been in graduate status.

Academic Residence

The student is required to complete at least two years of academic residence in graduate status at the University of California, including one year, ordinarily the second, in continuous residence at UCLA.* In most cases, however, a longer period of academic residence is necessary, and from three to five years is generally considered optimal. A graduate student is in academic residence if he/she completes at least one course (4 units) in graduate or upper-division coursework during a quarter.

*If the master's degree was earned at UCLA, one year of the residence requirement may have been met towards the doctorate.

Foreign Language

Every effort should be made to complete foreign language requirements before the beginning of graduate study or as early as possible thereafter so that the language skill will be of maximum benefit. In any case, students in doctoral programs requiring one or more languages must complete at least one language before the oral qualifying examination. Additional information and a list of departmental foreign language requirements, including in certain cases language requirements for admission, appear on pages 40-43.

Departmental Guidance Committee and Written and Oral Qualifying Examinations

The first phase of the student's program is supervised by a departmental adviser and/or departmental guidance committee. This committee administers the written, and in some departments, oral qualifying examinations after completion of courses and other preparatory work recommended or required by the department. (See requirements for registration for any University examination under Continuous Registration, page 24.)

After completion of all departmental requirements and the appropriate foreign language (if required, see pages 40-43), the chair of the department nominates a doctoral committee.

Doctoral Committee

Membership

A doctoral committee must consist of a minimum of five members, having appointments as professor (any rank), professor or associate professor emeritus, professor-in-residence (any rank), adjunct professor (any rank), or visiting professor or visiting associate professor or acting professor or acting associate professor at the University of California. Three members, the "inside" members, must hold appointments at UCLA in the student's major department and two, the "outside" members, must not. At least three members of the committee must hold an appointment as associate professor or professor (regular and/or in-residence series). Committees of more than five members may be appointed. In such cases, all members of the committee have the same voting rights. (See Section on Duties and Responsibilities.) UCLA graduate students who hold faculty titles may not serve on doctoral committees.

The chair of a doctoral committee must hold an appointment at UCLA in the student's major department or interdepartmental program as professor (any rank), as professor-in-residence (any rank), or as professor or associate professor emeritus. If a committee has co-chairs, at least one must be from the student's major department or interdepartmental program at UCLA.

Individuals permanently approved to chair doctoral committees shall be counted as if their appointment were in the regular professorial series.

For good cause, individuals who do not hold the appointments listed above, but who have equivalent qualifications, by petition may be nominated as one of the minimum five committee members or chair. (See Section on Appointment.)

For good cause, a faculty member resident on another campus of the University, who if appointed at UCLA could be a member of the student's major department, by petition may serve as either an "inside" or "outside" member.

The appointment of non-faculty, such as a person in private industry or on the staff of a museum, as the sixth member of a doctoral committee in situations in which they can provide special expertise to the dissertation project, is acceptable.

Appointment

Doctoral committees are appointed by the Dean of the Graduate Division, acting for the Graduate Council, upon nomination by the chair of the department or interdepartmental program committee, after consultation with the student. The committee must be appointed prior to holding the oral qualifying examination.

Regarding implementation of Membership, paragraph 4, the Dean of The Graduate Division may approve exceptions in individual cases. If permanent approval for appointment to doctoral committees or to serve as chair is requested, certification of qualification is to be made by the Graduate Council Committee on Instruction and Degree Requirements.

Recommendation for reconstitution of a doctoral committee is made jointly by the chair of the department and the chair of the doctoral committee, after consultation with the members of the committee who are in residence and the student. Reconstitution is approved by the Dean of the Graduate Division, acting for the Graduate Council.

Duties and Responsibilities

The Doctoral Committee

a) Conducts an oral qualifying examination, and at its option a written examination, to determine whether the candidate is qualified for advancement to candidacy for a doctoral degree. This examination is open only to the committee members and the student. All members of the committee must be present at the examination. It is the duty of the chair to see that all members of the committee are present. Each member of the committee reports the examination as "passed" or "not passed". A student may not be advanced to candidacy if more than one member votes "not passed" regardless of the size of the committee. Upon majority vote of the doctoral committee, the oral qualifying examination may be repeated once.

b) Approves the subject for the dissertation and provides the guidance required for progress toward the degree.

c) Decides, by unanimous agreement, to waive the final oral examination on the dissertation in cases where it is not required for all students by departmental regulations (but see paragraph f below). If such an examination is required, the entire committee must be in attendance (it is the duty of the chair to see that all members of the committee are present) and each member must record a decision of "passed" or "not passed." A student will not be considered to have passed the final oral examination with more than one "not passed" vote regardless of the size of the committee.

d) Selects from its membership, by unanimous agreement, the certifying members who will read, approve, and certify the dissertation. A minimum of three members must be certifying members, two of whom are from the student's department and one from an "outside" department. The chair of the committee must serve as a certifying member. If a committee has co-chairs, both must serve as certifying members. At least two "inside" and one "outside" certifying members must hold professional appointments at the University of California.

e) The certifying members (whether the entire committee or a subcommittee selected by the entire committee) read, approve, and certify the dissertation.

In cases where fewer than the entire membership have been chosen as certifying members, approval of the dissertation must be unanimous. If the entire committee is acting as certifying members, the dissertation is considered as approved with one negative decision. A negative decision is indicated by a refusal to sign the dissertation approval page and by a letter from the chair of the committee to the Dean of the Graduate Division reporting the fact.

f) Even though the doctoral committee has agreed to its waiver, any member of the subcommittee which has been chosen to certify the dissertation may require that a final oral examination, in defense of the dissertation, be held. If a final oral examination is required, the entire doctoral committee must attend and vote.

g) In addition to the above duties and responsibilities, the "outside" members have the responsibility to see that standards of performance on a campuswide and universitywide basis are maintained.

Doctoral Committees for Interdepartmental Programs

a) The chair of the committee to administer an interdepartmental doctoral program will supply the Graduate Division with a list of individual faculty members who actively participate in the program. The minimum of three "inside" members will be selected from this list; the minimum of two "outside" members will be selected from eligible faculty whose names do not appear on that list. An "outside" member may belong to the same department as one or more of the "inside" members, provided he/she is not one of the "active participants" listed. However, at least three different departments must be represented among the five members of the doctoral committee.

Each interdepartmental committee must establish criteria for the determination of its list of active participants. The list is not necessarily limited to nor inclusive of the complete membership of the interdepartmental committee itself. It may include a larger or smaller number of faculty members.

b) Faculty members from other campuses of the University of California may serve as "outside" members of the committee. They may be from any field, provided that the requirement concerning representation of three different departments on the committee is met, as stipulated above.

c) As with departmental doctoral committees, the chair of the interdepartmental program committee may nominate additional members beyond the minimum of five; such additional members will have full voting responsibilities on the committee.

d) The procedures to be followed in the event of a vacancy or change in the committee membership, or the absence of a committee member at the oral examination, will be the same as in the case of departmental committees.

Advancement to Candidacy

After passing the oral candidacy examination and completing any additional departmental requirements, the student is eligible for advancement to doctoral candidacy. He/she completes the advancement to candidacy form, which is mailed to him/her by the Registrar's Office. This form, bearing the approval signature of his/her doctoral committee chair and the Cashier's stamp in payment of the $25 advancement to candidacy fee, is then submitted to the Student and Academic Affairs Section, Graduate Division. On approval by the Dean of the Graduate Division, the student receives formal notice of advancement to candidacy. (See also Candidate in Philosophy Degree, page 33.)

Dissertation

The candidate demonstrates his/her ability for independent investigation by completing a dissertation in his/her principal field of study. His/her choice of subject must be approved by his/her doctoral committee which usually reviews and approves the dissertation prospectus at the time of the oral candidacy examination. Subsequently, the doctoral committee guides the candidate's progress toward completion of the dissertation. A minimum of three members of the doctoral committee, including at least two members from the candidate's department and at least one outside member, must read and certify that, in their judgment, the dissertation satisfies the research requirements for the doctoral degree. These members are selected by unanimous agreement of the doctoral committee, usually at the time of the oral qualifying examination. In cases where fewer than the entire membership have been chosen as certifying members, approval of the dissertation must be unanimous. If the entire doctoral committee is acting as certifying members, the dissertation is considered as approved with one negative decision. A negative decision is indicated by a refusal to sign the dissertation approval page and by a letter from the chair of the committee to the Dean of the Graduate Division reporting this fact.

For guidance in the final preparation of the manuscript, the student should consult the Manuscript Adviser, Office of the University Archivist, 134 Powell Library, and the Graduate Division publication, *Standards and Procedures for Theses and Dissertations* which is available in the Student and Academic Affairs Section or in the Archivist's office. Students planning to submit dissertations during the current academic year are encouraged to attend one of the orientation meetings on manuscript preparation and filing procedures which are conducted by the Manuscript Adviser and the Graduate Division at the beginning of each quarter. Orientation meeting dates are listed in the Calendar, page vi, and announcements are posted each quarter in departmental offices and libraries.

The manuscript may be submitted in the form of either camera-ready copy for microfilming or paper copies for binding, when departmental requirements do not conflict. Sufficient time should be allowed for typing and proofreading the manuscript, drafting charts, maps, and graphs, arranging for photographic work, and making final revisions and corrections. If approved by the doctoral committee, reports of research undertaken during graduate study which have been published or accepted for publication in appropriate media may be accepted by the Dean of the Graduate Division as the doctoral dissertation.

University Microfilms is authorized by UCLA to prepare and store the negatives of dissertations and dissertation abstracts, to publish the abstracts in *Dissertation Abstracts International*, and to send a positive copy of the dissertation to the Library of Congress. It is also authorized to publish at demand authorized facsimiles by microfilm-xerography when such materials are ordered as a result of their being noticed in *Dissertation Abstracts International*. The process of authorization will be explained in the next paragraph. Students are urged to keep the dissertation abstract within the 350-word limit.

The student signs a microfilm agreement with University Microfilms concerning the microfilming of the dissertation and the printing of the abstract. If the student wishes to copyright the dissertation, the Student and Academic Affairs Section of the Graduate Division can provide him/her a form that he/she should complete before submitting it to the Office of the University Archivist, 134 Powell Library, with a certified check or money order in the amount of $20, made payable to University Microfilms, to cover the copyright fee.

When the student's dissertation has final approval by his/her doctoral committee he/she submits the original dissertation signature (approval) page and the original title page to the Student and Academic Affairs Section, Graduate Division, for verification of completion of the degree requirements. After final approval by the Dean of the Graduate Division, the student files with the Manuscript Adviser one or more copies of the dissertation, in accordance with the number required for the method of manuscript preparation he/she has followed (complete instructions are included in the publication cited above). Deadlines for filing the dissertation are approximately two weeks before the date the degree is to be awarded (see Calendar, page vi).

See also the section, Registration in the Final Quarter for the Award of the Degree, page 24.

Final Oral Examination

A final oral examination may be required at the option of the doctoral committee, and in some departments it is required of all candidates. The Graduate Division is notified of the committee's decision to require or waive this examination on the Report on the Oral Qualifying Examination form. If a final oral examination is required, all members of the committee must attend and vote. It is the duty of the chair to see that all members of the committee are present. A student may pass with one negative vote. Notification is sent to the Graduate Division on the Report on the Final Oral Examination form. The examination may be held before the candidate has prepared the final copy of the dissertation, but passing the examination does not imply approval of the final copy of the dissertation. In case of failure, the doctoral committee shall determine whether or not the candidate may be reexamined.

Even though the doctoral committee has agreed to the waiver of the final oral examination, any member of the certifying committee may require that a final oral examination, in defense of the dissertation, be held. Students should consult their doctoral committee chair or departmental Graduate Adviser for further information (see also Registration in the Final Quarter for the Award of the Degree, page 24.)

In Candidacy Fee Offset Grant Program

The In-Candidacy Fee Offset Grant Program has been established to provide an incentive for early advancement to candidacy and for completion of degree requirements within the normative time proposed by the department and approved by the Graduate Council. The grant covers the Educational Fee. Students in professional doctorate programs are not included in this program.

All students who begin graduate study at the University of California, Los Angeles, after September, 1979 will be covered by this grant program. Those students with graduate standing prior to September 1, 1979 may elect to be included, and in that event, will be subject to all of the provisions. Eligible students may receive the grant from the time of their advancement to candidacy until the department's normative time-to-degree is reached. Students in the program must register for each regular academic session until all degree requirements are completed, unless a formal leave of absence is approved by the Dean of the Graduate Division.

To be eligible for the grant, the student must attain formal candidacy for the Ph.D. prior to the first day of classes of the academic session for which the grant is sought, and remain in good standing with a minimum 3.0 grade point average. The accrued time, which is the time since first enrollment at UCLA as a graduate student, as determined by the Graduate Dean, must be less than the established normative time for completion of the Ph.D. in that program. A candidate for the Ph.D. whose status lapses will be ineligible for the In-Candidacy Fee Offset Grant until, following readmission and registration, that student is again advanced to candidacy.

The amount of the grant shall be reduced by the amount of financial aid the student may receive from non-University sources to pay all or a portion of the Educational Fee. If the student is being provided with a package of financial aid, any component of which is need-based aid, the total amount of aid given to him/her, including the grant, may not exceed the student's total need, as determined by the Financial Aid Office.

Payment of the grant shall be in the form of an offset of the Educational Fee. In the event that the student has paid the Educational Fee prior to authorization of the grant, the award will be made as a reimbursement.

A Ph.D. candidate, admitted prior to Fall, 1979, must apply for the In-Candidacy Fee Offset Grant on a form provided by the Graduate Division. All information necessary to establish eligibility and the time accrued to that date must be supplied as part of this application.

A students' accrued time, which includes all quarters since first registration as a graduate student at UCLA, may be reduced to take into account formal leaves of absence (up to three quarters), work in a major that is not related to the Ph.D. major, the quarters the student was not registered after the receipt of a degree, and quarters the student was unable to devote full-time study toward the doctorate.

The Dean of the Graduate Division will determine the accrued time to date and certify the student's eligibility for the grant, if all of the relevant criteria are satisfied. The Graduate Division will be responsible for initiating the fee offset transaction(s) and for taking corrective action in the event a student becomes ineligible.

No time will be accrued from graduate study at another institution or UC campus except in the case of a student who enters a graduate program following enrollment at UCLA through the Intercampus Exchange Program.

The student will be notified of the length of time he/she is eligible for the grant when the Graduate Division computes his/her accrued time. Any appeal to correct an alleged error in the determination of eligibility or of accrued time must be submitted by the student to the Graduate Dean promptly, in writing.

If a student in the In-Candidacy Fee Offset Grant Program fails to register for any regular academic session, in residence or in absentia (those students engaged in research outside the State of California throughout a regular academic session), and has not been granted a formal leave of absence, all status as a graduate student and as a candidate for the Ph.D. degree will lapse. A student whose candidacy lapses, may, after readmission, be required by a department to retake the written qualifying examinations and may also be required by the doctoral committee to retake the oral qualifying examinations. The student will be required to refile an Application for Candidacy and pay the Candidacy Fee.

At least one quarter of registration subsequent to advancement or reinstatement to candidacy will be required before the Ph.D. will be conferred upon a readmitted student. Thus, a student whose candidacy lapses will be required to register for a minimum of two quarters before award of the degree (one quarter of registration to be readvanced to candidacy and an additional quarter in which the degree may be awarded).

A student who completes all requirements for the Ph.D., including the final examination and submission of the dissertation, prior to the beginning of classes in the academic session in which the degree is to be conferred need not register for that quarter provided that: 1) no other University policy requires registration for that session; 2) the continuous registration requirement has been met; and 3) the student was registered in the preceding regular academic session.

For further information, please contact the department concerned or the Student and Academic Affairs Section, Graduate Division, 1225 Murphy Hall.

Individual Ph.D. Program

The Individual Ph.D. Program has been established to allow superior students to pursue well-defined, scholarly, coherent programs that cannot be carried out within any existing doctoral program on any campus of the University of California. To be approved for an Individual Ph.D. Program, a student submits a proposal to the Graduate Council after having been a full-time graduate student at UCLA for at least one year, having proved qualified to pursue a departmental Ph.D. program, and having gained the support of at least three sponsoring members of the faculty. University minimum standards with regard to courses, standards of scholarship, residence, and dissertation apply.

Students should be aware of the fact that individual doctoral degrees may be of less value in the marketplace than standard departmental degrees. As a rule, departments in universities and colleges prefer to appoint individuals whose training is in a traditional field. It is likely that the same preference holds in relation to other opportunities for employment.

Further information regarding this program and the requirements for approval are available from the Graduate Division, 1225 Murphy Hall, University of California, Los Angeles, California 90024.

Doctoral Degrees Other Than The Ph.D.

Requirements for the Ed.D. (Doctor of Education), D.Env. (Doctor of Environmental Science and Engineering), Dr.P.H. (Doctor of Public Health), and D.S.W. (Doctor of Social Welfare) are stated in the announcements of the schools of Education, Public Health, and Social Welfare, and of the interdepartmental program in Environmental Science and Engineering. Further information may be obtained from the respective Graduate Advisers.

The Doctor of Philosophy Degree Is Offered In the Following Fields

Anatomy
Anthropology
Applied Linguistics
Archaeology
Art History
Astronomy
Atmospheric Sciences
Biochemistry
Biological Chemistry
Biology
Biomathematics
Biostatistics
Chemistry
Classics
Comparative Literature
Computer Science
Economics
Education
Engineering
English
Experimental Pathology
Folklore and Mythology
French
Geochemistry
Geography
Geology
Geophysics and Space Physics
Germanic Languages
Hispanic Languages and Literatures
History
Indo-European Studies
Islamic Studies
Italian
Kinesiology
Library and Information Science
Linguistics
Management
Mathematics
Medical Physics
Microbiology

Microbiology and Immunology
Molecular Biology
Music
Near Eastern Languages and Cultures
Neuroscience
Oriental Languages
Pharmacology
Philosophy
Physics
Physiology
Political Science
Psychology
Public Health
Romance Linguistics and Literature
Slavic Languages and Literatures
Sociology
Special Education*
Theater Arts
Urban Planning

A Professional Doctorate Degree is Offered in the Following Fields

Education (Ed.D.)
Environmental Science and Engineering (D.Env.) (Interdepartmental)
Public Health (Dr.P.H.)
Social Welfare (D.S.W.)

*Joint program with California State University at Los Angeles.

Graduate Foreign Language Requirements

Each department, school, or interdepartmental degree committee determines whether or not it will require a command of foreign languages for a degree. The chart on the following pages is a summary of the foreign language requirements for master's and doctoral degrees. These requirements have been set by the departments, schools, or committees with the approval of the Graduate Council.

A student normally meets the foreign language requirements by completing the Educational Testing Service Graduate School Foreign Language Test, the UCLA foreign language examination, or a departmental foreign language examination. Some departments permit fulfillment either by examination or by completing course 5 (with a minimum grade of C) or the equivalent (five quarters of language study with a minimum grade of C in each course). If a program requires special proficiency in a language, this is fulfilled by a higher than normal ETS score or by a special examination. In addition, some departments have approved substitute programs which may fulfill the language requirement.

For further information on these requirements and for additional departmental requirements for specific programs, students should consult their major departments. Questions concerning the examinations should be addressed to the Student and Academic Affairs Section, Graduate Division.

Educational Testing Service (ETS) Examinations

In French, German, Russian, and Spanish, the student takes the Educational Testing Service (ETS) Graduate School Foreign Language Test in which the UCLA minimum passing score is 500. The fee for each ETS examination is $20, and each student registers for the examination at the University Extension Cashier's Office (10995 Le Conte Avenue). Information regarding registration procedures may be obtained from the Student and Academic Affairs Section of the Graduate Division, 1225 Murphy Hall. To take ETS examinations, enrollment as a UCLA student is not required.

When language requirements are to be fulfilled by ETS examinations, prospective graduate students are normally encouraged to take these examinations while still juniors or seniors, if possible; and their scores, if sufficiently high, will satisfy foreign language requirements for UCLA graduate degrees.

Educational Testing Service examination dates for 1982-83 are as follows: October 23, 1982; February 5, April 9, and June 18, 1983. ETS registration dates are included in the Calendar, page vi).

UCLA Examinations

Examinations in languages other than French, German, Russian, and Spanish are offered by UCLA language departments to registered UCLA students only. Information regarding these examinations may be obtained from the Graduate Division, 1225 Murphy Hall.

UCLA Departmental Language Examinations

Some departments have obtained Graduate Council approval to administer language examinations to students in their programs. These examinations are administered by faculty committees in the departments. Students must be registered when they take departmental language examinations. For further information, students should contact the Graduate Adviser in their departments.

English as a Foreign Language

With the approval of his/her major department and the Dean of the Graduate Division, a foreign student whose native language is other than English may offer either English or his/her native language to fulfill the foreign language requirement. He/she may offer only one of these in fulfilling a 2-language requirement. Proficiency in English is evaluated by performance on the UCLA entrance examination in English for foreign students, together with achievement in graduate work. The Department Chair's signature on the student's petition is certification of sufficient competence in English. This form also serves as certification that the department approves the use of a native language.

Substitute Programs

In departments for which the Graduate Council has approved the use of substitute programs, a special program of coursework may be offered in place of a foreign language. The student should consult the departmental Graduate Adviser for advance planning of such a program. The program is formulated within the department which notifies the Graduate Division after its completion.

Timing

Students in master's programs must complete the language requirement before advancement to candidacy. Students in doctoral programs requiring one or more foreign languages must complete at least one language before the oral candidacy examination. If a substitute program is offered in place of one language, the language must be completed before the oral candidacy examination.

The following requirements are those formally administered by the Graduate Division and include the principal languages which departments normally require or recommend. Departments should be consulted as they may accept other languages or may require additional languages, special competence, or special procedures for fulfillment, depending upon the student's program.

Articulated and Concurrent Degree Programs

Articulated and concurrent degree programs have the advantage of allowing the student to acquire two degrees in less time than normally required

if the courses of instruction are taken in sequence. The aim of these programs is to provide an integrated curriculum or greater breadth between the two disciplines. Inquiries should be directed to the departments or schools involved.

Programs leading to concurrent degrees (specified amount of credit applied toward both degrees) have been approved 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.

Management, M.B.A. — Architecture and Urban Planning, M.A.

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.

Programs leading to articulated degrees (no credit overlap) are offered in the following disciplines:

African Area Studies, Interdepartmental M.A. — Public Health, M.P.H.

Latin American Studies, Interdepartmental M.A. — Architecture and Urban Planning, M.A.

Latin American Studies, Interdepartmental M.A. — Education, M.Ed. (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. — Any Graduate Division major, Ph.D.

Oral Biology, M.S. — Dentistry, D.D.S. or Certificate

*Joint program with California State University at Los Angeles.

Interdepartmental Degree Programs

In addition to graduate degree programs offered in schools and departments, interdisciplinary graduate programs, involving two or more participating departments, are also offered. These programs are administered by interdepartmental faculty committees appointed by the Dean of the Graduate Division, acting for the Graduate Council.

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.)

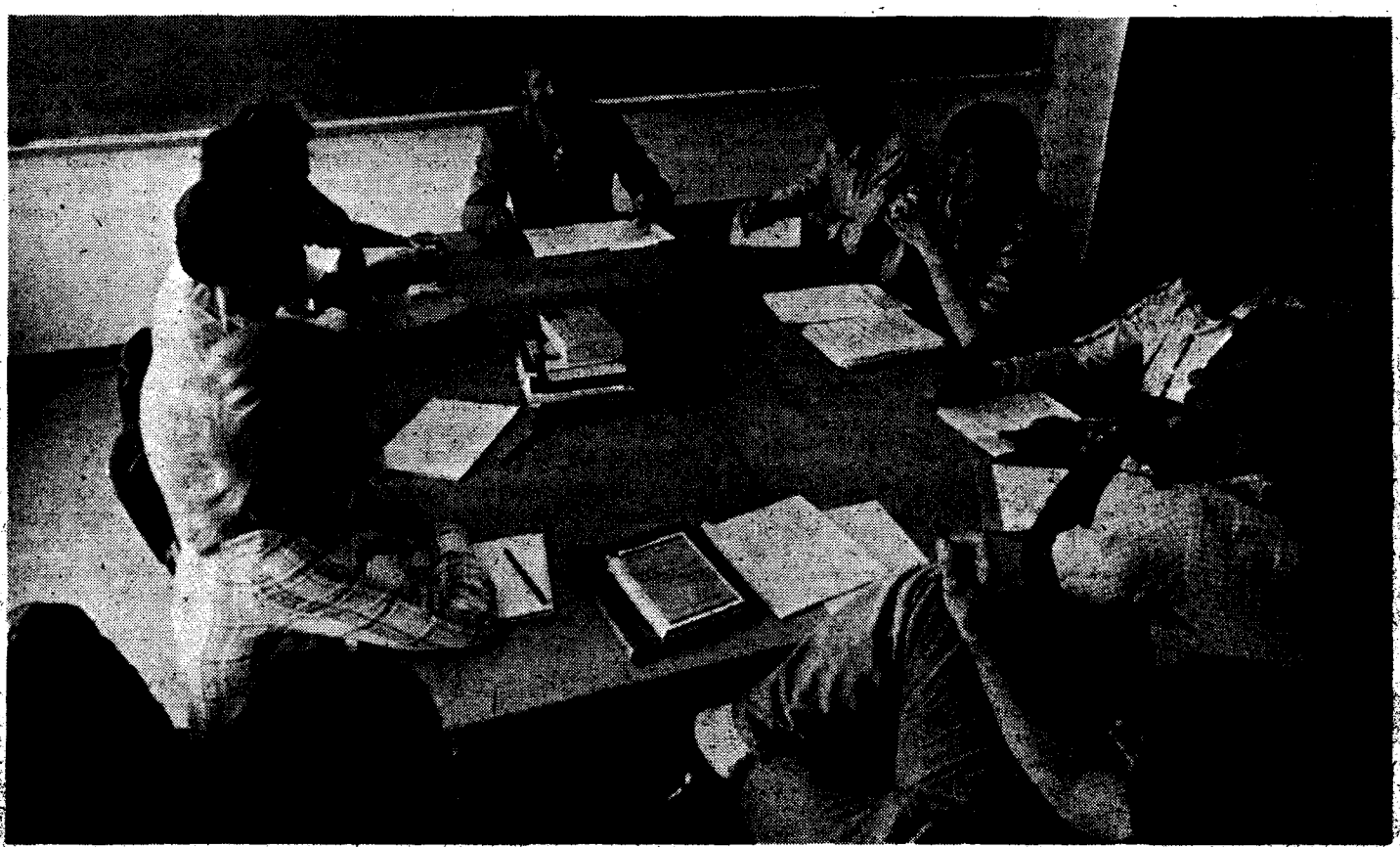
Latin American Studies (M.A.)

Molecular Biology (Ph.D.)

Neuroscience (Ph.D.)

Romance Linguistics and Literature (M.A., Ph.D.)

If you would like further information, please contact the Chair or Graduate Adviser of the Interdepartmental Degree Program.



List of Graduate Foreign Language Requirements

Department Interdepartmental Degree Committee	Degree Program and Specialization	Requirement
African Area Studies	M.A.	1 language (African)*
Afro-American Studies	M.A.	1 language
American Indian Studies	M.A.	Completion of Linguistics 114A or 114B.
Anatomy	M.S.	None
	Ph.D.	None
Anesthesiology	M.S. (Nurse Anesthesia)	None
Anthropology	M.A.	1 language (French, German, Russian, Spanish)
	Ph.D.	1 language, special proficiency (French, German, Russian, Spanish)†
Applied Linguistics	Ph.D.	2 languages or 1 language, special proficiency
Archaeology	M.A.	1 language*
	Ph.D.	2 languages*
Architecture and Urban Planning	M.Arch.	None
	M.A. (Architecture and Urban Planning)	None
	Ph.D. (Urban Planning)	None
Art, Design, and Art History	M.A.	None
	M.A. (Art History)	2 languages (French and German unless otherwise specified)*
	M.F.A. (Master of Fine Arts)	None
	Ph.D. (Art History)	2 languages (French and German unless otherwise specified), with additional language needs to be determined by student's committee
Asian American Studies	M.A.	1 language (2 years Asian at University level or equivalent)
Astronomy	M.S.	None
	M.A.T. (Master of Arts in Teaching)	None
	Ph.D.	None
Atmospheric Sciences	M.S.	None
	Ph.D.	None
Biological Chemistry	M.S.	None
	Ph.D.	None
Biology	M.A.	None
	Ph.D.	None
Biomathematics	M.S.	None
	Ph.D.	None
Chemistry	M.S. (Biochemistry)	None
	M.S. (Chemistry)	1 language (French, German)
	Ph.D. (Biochemistry)	None
	Ph.D. (Chemistry)*	1 language (French, German)*†
Classics	M.A. (Classics, Greek, or Latin)	1 language (French or German or Italian by petition) or completion through Course 5 with minimum grade of C.
	Ph.D. (Classics)	2 languages (French or Italian *and* German) or completion through Course 5 with minimum grade of C.
Comparative Literature	M.A.	2 languages, special proficiency*
	Ph.D.	2 languages, special proficiency*
Dance	M.A.	None
Dentistry	M.S. (Oral Biology)	None

*Consult the department concerning any additional foreign languages which may be required or recommended.
†With Departmental approval, a program of courses or other work may be substituted for a language.

Department Interdepartmental Degree Committee	Degree Program and Specialization	Requirement
Earth and Space Sciences	M.S. (Geochemistry)	None
	M.S. (Geology)	None
	M.S. (Geology with specialization in Non-Renewable Natural Resources)	None
	M.S. (Geophysics and Space Physics)	None
	Ph.D. (Geochemistry)	None
	Ph.D. (Geology)	None
	Ph.D. (Geophysics and Space Physics)	None
Economics	M.A.	None
	Ph.D.	1 language (French, German, Russian, Spanish)†
Education	M.A.	None
	M.Ed.	None
	Ph.D.	None
	Ph.D. (Special Education-Joint Program with *California State University at Los Angeles)	None
	Ed.D.	None
Engineering and Applied Science	M.S. (Engineering or Computer Science)	None
	M.Engr.	None
	Ph.D. (Engineering or Computer Science)	None
	Engineer Degree	None
English	M.A.	Undergraduate foreign language study§ 1 language
	M.A. (Teaching English as a Second Language)	For students whose native language is English, program of language courses.
	Ph.D.	Undergraduate foreign language study§ 2 languages; or 1 language, special proficiency
	Certificate (Teaching of English as a Second Language)	For students whose native language is English, program of language courses.
Environmental Science and Engineering	D.Env.	None
Folklore and Mythology	M.A.	1 language (French, German)
	Ph.D.	2 languages (French and German)*
French	M.A.	1 language (German, Italian, Latin, Spanish)*
	Ph.D.	2 languages, level 5 and 6 (German, Latin, Spanish, or Russian)*
Geography	M.A.	Research Tool
	Ph.D.	Research Tool
Germanic Languages	M.A. (German)	1 language (French)*
	M.A. (Scandinavian)	1 language (French or German) (and Old Icelandic)
	Ph.D.	1 language (French)*
History	M.A.	1 language
	Ph.D.	Minimum of 2 languages (except U.S. History which requires 1 language)*
Indo-European Studies	Ph.D.	3 languages (French, German, and Russian)
Islamic Studies	M.A.	1 language (French, German)*
	Ph.D.	2 languages (French, German)*
Italian	M.A.	1 language (French, German)*
	Ph.D.	2 languages (French, German, Latin, Spanish)*

*Consult the department concerning any additional foreign languages which may be required or recommended.
†With departmental approval, a program of courses or other work may be substituted for a language.
§Required for *admission* to the graduate program.

Department Interdepartmental Degree Committee	Degree Program and Specialization	Requirement
Kinesiology	M.S.	None
	Ph.D.	None
Latin American Studies	M.A.	2 languages (Spanish, Portuguese)*
Library and Information Science	M.L.S.	1 or 2 languages*†
	Ph.D.	1 or 2 languages*†
	Certificate (Specialization in Library and Information Science)	None
Linguistics	M.A.	1 language (French, German, Italian, Russian, Spanish)
	Ph.D.	3 years study in 1 language, or 2 years study in each of 2 languages§ *2 languages; or 1 language, special proficiency* (French, German, Italian, Russian, Spanish)
Management	M.S.	None
	M.B.A.	None
	Ph.D.	None
Mathematics	M.A.	None
	M.A.T. (Master of Arts in Teaching)	None
	Ph.D.	2 languages (French, German, Russian)†
Microbiology	M.A.	None
	Ph.D.	None
Microbiology and Immunology	M.S.	None
	Ph.D.	None
Molecular Biology	Ph.D.	None
Music	M.A.	1 language (French, German, Italian, Spanish)*
	M.F.A. (Performance Practices)	1 language (French, German, or Italian)
	Ph.D.	2 languages (French, German, Italian, Latin, Russian)*
Near Eastern Languages and Cultures	M.A.	1 major Western foreign language (English may be offered by foreign students)*
	Ph.D.	2 major Western foreign languages (English may not be offered by foreign students)*
Neuroscience	Ph.D.	None
Nursing	M.N.	None
Oriental Languages	M.A.	1 year Japanese for Chinese majors; 1 year Chinese for Japanese majors
	Ph.D.	2 languages (French, German)*
Pathology	M.S. (Experimental Pathology)	None
	Ph.D. (Experimental Pathology)	None
Pharmacology	M.S.	None
	Ph.D.	None
Philosophy	M.A.	1 language (French, German, Greek, Latin)†
	Ph.D.	1 language (French, German, Greek, Latin) Spec. Prof.†
Physics	M.S.	None
	M.A.T. (Master of Arts in Teaching)	None
	Ph.D.	None
Physiology	M.S.	None
	Ph.D.	None
Political Science	M.A.	None
	M.P.A. (Public Administration)	None
	Ph.D.	1 language, score of 500 or more on ETS or other examination arranged by Graduate Division; or substitute program of proficiency in a research methodology.
Psychiatry and Biobehavioral Sciences	M.S.P. (Social Psychiatry)	None

*Consult the department concerning any additional foreign languages which may be required or recommended.
†With departmental approval, a program of courses or other work may be substituted for a language.
§Required for *admission* to the graduate program.

Department Interdepartmental Degree Committee	Degree Program and Specialization	Requirement
Psychology	M.A.	None
	Ph.D.	None (except in Measurement and Psychometrics. A foreign language or substitute program may be required for certain students in other areas or specializations).*
Public Health	M.S. (Public Health, Biostatistics, Preventive Medicine and Public Health)	None
	M.P.H.	None
	Ph.D. (Biostatistics)	None
	Ph.D. (Public Health)	1 language
	Dr.P.H.	None
Radiological Sciences	M.S. (Medical Physics)	None
	Ph.D. (Medical Physics)	None
Romance Linguistics and Literature	M.A.	2 romance languages*§
	Ph.D.	1 language*
Slavic Languages and Literatures	M.A.	1 language (French, German)*
	Ph.D.	2 languages (French, German)§
Social Welfare	M.S.W.	None
	D.S.W.	None
Sociology	M.A.	None
	Ph.D.	1 language (French, German, Italian, Russian, Spanish)
Spanish and Portuguese	M.A. (Spanish)	1 language
	M.A. (Luso-Brazilian Language and Literatures)	1 language
	Ph.D. (Hispanic Languages and Literatures)	2 languages
Theater Arts	M.A. (Theater)	None
	M.A. (Motion Pictures)	None
	M.F.A. (Theater, Motion Pictures, Television)	None
	Ph.D.	1 language

*Consult the department concerning any additional foreign languages which may be required or recommended.
§Required for admission to the graduate program.



Courses

The following symbols are used in the departmental faculty rosters and course listings.

Faculty Roster Symbols

[1]In Residence summer only.
[2]In Residence fall only.
[3]In Residence winter only.
[4]In Residence spring only.
[5]On leave summer.
[6]On leave fall.
[7]On leave winter.
[8]On leave spring.
[9]On leave summer and fall.
[10]On leave fall and winter.
[11]On leave fall and spring.
[12]On leave winter and spring.
[13]On leave spring and summer.
[14]On leave.
[15]Recalled to active service.
[16]Member of Brain Research Institute.
[17]Member of the Institute of Geophysics and Planetary Physics.
[18]Joint Appointment.

Course Listing Symbols

*[1]Not offered 1981-1982.
*[2]Given alternate years, not offered 1981-1982.
*[3]Offered as schedule and staff allow.
*[4]Not offered every year.
*[5]Given alternate years; offered 1981-1982.
*[6]Offered Fall 1981 only.
*[7]Offered Winter 1982 only.
*[8]Offered Spring 1982 only.
*[9]Offered on request depending upon enrollment.
*[10]Consult department for details.
*[11]Not applicable to M.A. degree.
*[12]Native speakers not normally eligible.
*[13]A and B offered in alternate years.
*[14]Enrollment is limited. Consult Office of Undergraduate Affairs.
*[15]Dertermined on basis of change in course content.
*[16]Only course C to be offered.
*[17]Courses A and B to be offered.
*[18]Open only to Engineering Executive Program students.
*[19]Not offered Fall, 1981.
*[20]Not offered Winter, 1982.
*[21]Not offered Spring, 1982.
*[22]This course may not be applied toward the requirements of any graduate degree offered by SEAS in the School of Engineering and Applied Science.

Graduate Courses

Graduate courses (numbered 200-299, 400-499, 500-599) are normally open only to students admitted in graduate status. Under special circumstances some courses in the 200-299 series are open to undergraduate enrollment with proper departmental and instructor consent.

Professional Courses

Teacher-training course (numbered 300-399) are highly specialized courses dealing with methods of teaching, and are acceptable toward the bachelor's degrees only with the limitations prescribed by the various colleges or schools.

Cross-Listed Courses

Concurrently Scheduled Courses: Concurrent scheduling is defined as pairs of courses, usually within a single department or program, which are offered at the same time and place with the same instructor, but for which credit is given at two levels—usually graduate and undergraduate.

For concurrently scheduled courses, suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

A capital "C" before the initial number of a course indicates that the course has been approved for concurrent scheduling. Course descriptions 200 and above will be found in the *Graduate Catalog*, and 199 and below in the *Undergraduate Catalog*.

Multiple-listed courses: A capital "M" before the initial number identifies courses, ordinarily at the same level, but listed as offerings in two or more different departments. These courses will be taught at the same time and place, with the same instructor, but students will receive credit from the department or program in which they choose to enroll.

Course Listings

Each course in the following listings by departments, as in the samples that follow, has the credit value of a full course unless otherwise noted. Thus, a listing, Mathematics 210A-210B-210C, Algebra, indicates three full courses, 210A, 210B, and 210C; while a listing, Dance, 114A-114F, Advanced Contemporary Dance, (½ course each), indicates six half courses, 114A, 114B, 114C, 114D, 114E, and 114F.

Where noted, credit for specific course is dependent upon completion of a subsequent course.

African Area Studies

(Interdepartmental)

(Office, 10244 Bunche Hall)

Edward Alpers, Ph.D., *Associate Professor of African History.*
James S. Coleman, Ph.D., *Professor of Political Science.*
Christopher Ehret, Ph.D., *Professor of African History.*
Hassan el Nouty, Ph.D., *Professor of African Literature of French Expression.*
Teshome Gabriel, Ph.D., *Assistant Professor of Theater Arts and Assistant Director of the African Studies Center.*
John Galbraith, Ph.D., *Professor of History.*
Walter Goldschmidt, Ph.D., *Professor of Anthropology and Psychiatry.*
Gerry A. Hale, Ph.D., *Associate Professor of Geography.*
Peter Hammond, Ph.D., *Professor of Applied Anthropology.*
Richard Hawkins, M.A., *Professor of Motion Pictures/Television.*
Robert A. Hill, M.Sc., *Assistant Professor of History.*
Thomas Hinnebusch, Ph.D., *Assistant Professor of Linguistics.*
Derrick B. Jelliffe, M.D., *Professor of Public Health and Pediatrics.*
Patrice E.F. Jelliffe, M.P.H., *Associate Researcher/Lecturer in Public Health.*
Fredrick C. Kintzer, Ed.D., *Professor of Education.*
Mazisi Kunene, M.A., *Professor of African Languages and Literature.*
Hilda Kuper, Ph.D., *Professor Emeritus of Anthropology.*
Leo Kuper, Ph.D., *Professor Emeritus of Anthropology.*
Joseph Lauer, Ph.D., *History and M.Sc. Library Science.*
Wolf Leslau, Ph.D., *Professor Emeritus of Hebrew and Semitic Linguistics.*
Michael F. Lofchie, Ph.D., *Professor of Political Science and Director of the African Studies Center.*
Jacques Maquet, Ph.D., *Professor of Anthropology.*
Dan F. McLaughlin, M.A., *Associate Professor of Theater Arts/Animation.*
Peter Marris, B.A., *Professor of Architecture and Urban Planning.*
Eugene L. Mendonsa, Ph.D., *Assistant Professor of Anthropology.*
Alfred K. Neumann, M.D., *Professor of Public Health.*
Charlotte G. Neumann, M.D., *Associate Professor of Public Health and Pediatrics.*
David Nicholas, M.D., *Lecturer in the School of Public Health.*
J.H.K. Nketia, B.A., *Professor of African Music.*
Boniface Obichere, Ph.D., *Professor of African History.*
Anthony Orme, Ph.D., *Professor of Geography.*
Merrick Posnansky, Ph.D., *Professor of History.*
John Povey, *Professor of English and Chair of TESL.*
Arnold Rubin, Ph.D., *Associate Professor of Art.*
John F. Schacher, Ph.D., *Professor of Public Health in Residence.*
Russel G. Schuh, Ph.D., *Associate Professor of Linguistics.*
Edward W. Soja, Ph.D., *Professor of Urban and Regional Planning.*
Walter Hartmut, Ph.D., *Associate Professor of Geography.*
William E. Welmers, Ph.D., *Professor of Linguistics and African Languages.*

Richard L. Abel, Ph.D., *Professor of Law.*
Stephen Anderson, Ph.D., *Associate Professor of Linguistics.*
Alexander Badawy, Ph.D., *Professor Emeritus History of Art.*
Pamela J. Brink, Ph.D., *Associate Professor of Nursing and Anthropology.*
J. Alfred Cannon, M.D., *Lecturer in Psychiatry.*
Nicholas E. Collias, Ph.D., *Professor of Zoology.*
Robert B. Edgerton, Ph.D., *Professor of Anthropology and Psychology.*
Sebastian Edwards, Ph.D., *Acting Assistant Professor, Department of Economics.*
John L. Fahey, M.D., *Professor of Microbiology and Immunology.*
Pierre-Michel Fontaine, Ph.D., *Associate Professor of Political Science.*
Victoria Fromkin, Ph.D., *Professor of Linguistics.*
John Hawkins, Ph.D., *Assistant Professor of Education.*
Gail E. Kennedy, Ph.D., *Assistant Professor of Anthropology.*
John Kennedy, Ph.D., *Professor of Anthropology and Psychiatry.*
Robert S. Kirsner, Ph.D., *Assistant Professor of Dutch-Flemish and Afrikaans.*
Peter Ladefoged, Ph.D., *Professor of Linguistics.*
Kobla Ladzekpo, M.A., *Lecturer in African Music.*
Richard Logan, Ph.D., *Professor of Geography.*
Henry McGee, J.D., *Professor of Law.*
Claudia Mitchell-Kernan, Ph.D., *Associate Professor of Anthropology.*
Thomas G. Penchoen, Ph.D., *Assistant Professor of Berber.*
Clifford H. Prator, Ph.D., *Professor Emeritus of English as a Second Language.*
Douglass Price-Williams, Ph.D., *Professor of Anthropology and Psychiatry.*
George Rand, Ph.D., *Associate Professor of Architecture and Urban Planning.*
Dwight Read, Ph.D., *Associate Professor of Anthropology.*
Beverly Robinson, Doctoral Candidate, *Lecturer in Theater Arts.*
Robert J. Russel, Ph.D., *Assistant Professor of Anthropology.*
Georges Sabagh, Ph.D., *Professor of Sociology.*
Paul Schacter, Ph.D., *Professor of Linguistics.*
Nathan Shapira, Dottore in Architettura, *Associate Professor of Art.*
Richard Sklar, Ph.D., *Professor of Political Science.*
Allegra Snyder, M.A., *Associate Professor of Dance.*
Werner Terjung, Ph.D., *Professor of Geography.*
Benjamin E. Thomas, Ph.D., *Professor Emeritus of Geography.*
Sandra Thompson, Ph.D., *Professor of Linguistics.*
Thomas Weisner, Ph.D., *Associate Professor of Anthropology.*

The Master of Arts Degree

Admission Requirements. In addition to the University minimum requirements, applicants are required, a) to take the Graduate Record Examination, b) to submit three letters of recommendation from academic referees, one of which can be from an employer if the applicant has been away from school for some time, c) to submit a sample research evidence of serious scholarly potential, and d) to present a resume describing both academic and professional experience.

In addition to meeting the requirements of the Graduate Division, the student must have adequate preparation in undergraduate fields related to the program. Required preparation for the master's degree in African Area Studies is a degree of Bachelor of Arts in the social sciences or arts and humanities.

Advising. The Master of Arts in African Area Studies is supervised by an interdepartmental faculty committee appointed by the Dean of the Graduate Division. The Chair of this committee and Graduate Adviser is Professor Teshome H. Gabriel. The Assistant to the Graduate Adviser for the M.A. in African Area Studies is Ms. Maxine Driggers, African Studies Center, 10250 Bunche Hall. Students are expected to remain in continuous contact with Ms. Driggers about their programs and their academic progress.

Major Fields or Subdisciplines. Students concentrate their studies in a major and minor discipline in the social sciences, arts and humanities, or professional school. For more information prospective students should contact the Assistant to the Graduate Adviser, 10250 Bunche, African Studies Center.

Foreign Language Requirement. The student is required to satisfy the language requirement in one of the following ways: a) take three quarter-length courses (12 units) in an African language, with an average grade of B, or better. These courses will not count toward the nine courses required for the degree; b) pass a Linguistics Department examination in an African language not regularly offered; c) prove that the student is a native speaker of an African language; d) prove that the student has a Foreign Service Institute rating of 3, or above in an African language.

Course Requirements. A minimum of nine courses are required for the M.A. At least five courses must be at the graduate level. The courses must be distributed between disciplines as follows: a) Major discipline: a minimum of four courses, of which two 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; b) Minor discipline: a minimum of two courses of which one must be at the graduate level; c) Third discipline: the student must take a course on Africa, preferably of the survey type, in a third discipline, e.g. African Languages 190.

Thesis or Comprehensive Examination Plan:
Thesis Plan: Plans are currently underway to introduce an M.A. thesis option into the Program. Interested students should confer with the Graduate Adviser. Currently, our program requires a comprehensive examination.
The Comprehensive Examination Plan: There is no Thesis Plan. Each candidate for the master's degree in African Area Studies will be required to take a written examination administered by a 3-person committee. This committee will normally consist of two faculty members from the candidate's major field and one faculty member from the candidate's minor field. It is the student's responsibility to make arrangements for this examination with faculty members in the appropriate departments. Exceptions will be granted only by consent of the Graduate Adviser. The examination will normally be four hours in length, with major and minor fields being given equal time. For grading purposes the major field will count for 60 per cent; the minor field, 40 per cent. An oral examination may be held at the discretion of the examining committee after it has read the candidate's written examination. A student who fails the Comprehensive Examination may be permitted to retake it only with the approval of the Graduate Adviser. No student will be allowed to retake the examination more than once.

Time to Degree. Normal progress from graduate admission to award of the degree: five quarters.

500 Series Course Limitation. One course in the 500 series shall apply toward the minimum of nine courses required for a master's degree. That one course may be counted toward the minimum of five graduate courses required for the degree. By permission of the Graduate Adviser, another 500 level course may be allowed, but may not be applied toward the minimum of five graduate courses required for the degree.

Disqualification and Appeal of Disqualification: The recommendation of disqualification is made by the Graduate Adviser and will be approved by the Interdepartmental Committee. Students may appeal the case to the Committee. Disqualification may be recommended for failure to maintain a minimum grade point average of 3.0, failure of the master's examination, insufficient progress toward the degree and infractions of academic standards such as plagiarism.

Articulated Degree Program:

African Area Studies (M.A.) and Public Health (M.P.H.). The School of Public Health and the Interdepartmental Degree Program in African Area Studies have now created an arrangement whereby a student can work sequentially for the master's degree in African Area Studies (M.A.) and a master's degree in Public Health (M.P.H.). By planning a major field emphasis in Public Health while working toward the M.A. degree 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 working for these two degrees should be aware that this is not a concurrent degree program. The articulated degree program operates in a sequential manner. The normal pattern of graduate study for a student working in this articulated degree program will begin with admission to the M.A. program in African Area Studies. While enrolled in this program, a student will consult with faculty members in the School of Public Health and, on their advice, take a specified series of courses in the field of Public Health. This coursework will enable students to establish a solid basis upon which they may build their academic credibility for subsequent application to the M.P.H. degree.

Admission for the M.A. in African Area Studies does not automatically confer admission into the M.P.H. program since each of these degree programs retains complete jurisdiction over its own admissions. Admission to the M.P.H. program will normally occur in the following manner. While continuing in the M.A. in African Area Studies program, the student will file a petition for a change of major to Public Health. This will ordinarily occur during the quarter in which the student anticipates completion of the M.A. degree in African Area Studies. If this petition is approved by the School of Public Health, the student will enter the M.P.H. program the following quarter.

Students should be aware that 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 counted toward the M.P.H. in Public Health.

Students interested in the articulated program should write to Ms. Maxine Diggers, Assistant to the Graduate Adviser, M.A. Program in African Area Studies, African Studies Center, UCLA, Los Angeles, CA 90024.

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 with the Graduate Adviser.

Other Relevant Information. a) Application of S/U graded courses to the M.A. in African Area Studies: No more than one course graded on an S/U basis may be counted toward the minimum of nine courses required for the M.A. degree, except by permission of the Graduate Adviser; b) Students are expected to complete the M.A. degree by the close of their seventh quarter of full-time enrollment. A brochure describing the graduate African Area Studies Program is available to interested students in the Assistant to the Graduate Adviser's office, 10250 Bunche Hall.

African Area Course List: All courses are not offered every academic year. Students should verify courses with respective departments.

Anthropology 112. Old Stone Age Archaeology.
121A. Fossil Man and His Culture.
121B. The Australopithecines.
158. Hunting and Gathering Societies.
171. Civilizations of Sub-Saharan Africa.
133P. Social and Psychological Aspects of Myth and Ritual.
135Q. The Individual in Culture.
133R. Aesthetic Anthropology.
M168. Health in Culture and Society.
161. Development Anthropology.
250. Social Anthropology.
255. Comparative Political Institutions.
M263. Medical Anthropology.
271. African Cultures.
280. Anthropological Theory.

Architecture and Urban Planning 232. Spatial Planning: Regional and International Development.
234. Seminar in Spatial Development Policy.
235A. Regional Approaches to National Development.
235B. Urban and Regional Economic Development.

Art 118C. The Arts of Sub-Saharan Africa.
119A. Advanced Studies in African Art: Western Africa.
119B. Advanced Studies in African Art: Central Africa.
220. The Arts of Africa, Oceania and Pre-Columbian America.

Dance 140A. Dance Cultures of the World— Africa.
171B. Dance of Ghana.
226A-226B-226C. Dance Expressions in Selected Cultures.

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.

Education 204A. Topics and Issues in International and Comparative Education.
204B. Introduction to Comparative Education.
204C. Education and National Development.
207. Politics and Education.
253A. Seminar in Current Problems in Comparative Education.
253B. Seminar: African Education.
253F. Seminar in Education in Revolutionary Societies.

English 114. World Literatures in English.
271. Studies in African Literature in English.

French 121A. Franco-African Literature.
221A. Introduction to the Study of French-African Literature.
221B. French-African Literature of Madagascar and Bantu Africa.
221C. French-African Literature of Berber-Sudanese and Arabo-Islamic Africa.
257A-257B. Studies in French-African Literature.

Geography 117. Animal Geography: Cultural Aspects.
122. Man and Environment in Africa.
188. North Africa.
189. Middle and Southern Africa.
288. Northern Africa.
289. Middle and Southern Africa.

Germanic Languages 101B. Elementary Afrikaans.
101E. Intermediate Readings in Afrikaans.
112. Dutch, Flemish and Afrikaans Literature in Translation.
135. Introduction to Afrikaans Literature.

History 109A-109B. History of North Africa From the Moslem Conquest.
142A-142B. The British Empire Since 1783.
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. History of West Africa: From Earliest Times to 1800.
176B. History of West Africa: Since 1800.
177. Ethiopia and the Horn of Africa.
178A-178B. History of East and Central Africa.
179A. History of Southern Africa: From Origins to 1870.
179B. History of Southern Africa: Since 1870.
244A-244B. Seminar in British Empire History.
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.

Linguistics 220. Linguistic Areas (Africa).
225. Linguistics Structures.
African Languages 1A-1B-1C. Elementary Swahili.
2A-2B-2C. Intermediate Swahili.
7A-7B-7C. Elementary Zulu.
8A-8B-8C. Intermediate Zulu.
9A-9B-9C. Elementary Xhosa.
10A-10B-10C. Intermediate Xhosa.
11A-11B-11C. Elementary Yoruba.
12A-12B-12C. Intermediate Yoruba.
13A-13B-13C. Elementary Igbo.
14A-14B-14C. Intermediate Igbo.
31A-31B-31C. Elementary Bambara.
32A-32B-32C. Intermediate Bambara.
41A-41B-41C. Elementary Hausa.
42A-42B-42C. Intermediate Hausa.
103A-103B-103C. Advanced Swahili.
133A-133B-133C. Advanced Bambara.
143A-143B-143C. Advanced Hausa.
150A-150B-150C. African Literature in English Translation.
190. Survey of African Languages.
192. Comparative Studies in African Languages.
201A-201B. Comparative Niger-Congo.
202A-202B-202C. Comparative Bantu.
270. Seminar in African Literature.

Music 143A-143B. Music of Africa.
M154A-M154B. The Afro-American Musical Heritage.
190A-190B. Proseminar in Ethnomusicology.
255. Seminar in Musical Instruments of the Non-Western World.
280. Seminar in Ethnomusicology.
287. Seminar in African Music.

Near Eastern Languages
Arabic 1A-1B-1C. Elementary Arabic.
102A-102B-102C. Intermediate Arabic.
103A-103B-103C. Advanced Arabic.
111A-111B-111C. Spoken Arabic.
220A-220B-220C. Islamic Texts.
240A-240B-240C. Arab Historians and Geographers.
Berber 101A-101B-101C. Elementary Berber.
102A-102B-102C. Advanced Berber.
120A-120B-120C. Introduction to Berber Literature.
130. The Berbers.

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.
250E. African Studies.
250K. North African Studies.
271. Seminar in Political Change.

Public Health 111. Human Disease and Public Health.
113. Infectious Diseases and Public Health.
161. Nutrition and Health.
179A. Health Programs— Africa.
179B. African Health Sector Analysis.
186. The World's Population and Food.
214. Infectious and Tropical Disease Epidemiology.
216A. Ecology of Exotic Diseases.
216B. Viral Diseases of Man.
218A-218B. Protozoal Diseases of Man.
220A-B. Helminthic Diseases.

272. Seminar on Current Issues in Maternal and Child Health.
472A. Maternal and Child Health in Developing Areas.
472B. Recent Advances in Maternal Health.
472D. Overseas Refugee Health.
Sociology 130. Social Processes in Africa.
140. Political Sociology.
213A-213B. Techniques of Demographic and Ecological Analysis.
256. Demography.
274. Selected Problems in the Sociology of Africa.
Theater Arts 102E. Theater of the Non-European World.
106C. History of African, Asian and Latin American Film.
108. History of Documentary Film.
112. Film and Social Change.
184A. Community TV Programming and Management.
202P. Seminar in Traditions of African Theater.
M209C. Ethnographic Film.
M265A-M265B. Ethnographic Film Direction.
276. Seminar in Non-Western Films.

Afro-American Studies

(Interdepartmental)

(Office, 3111 Campbell Hall)

Alden Ashforth, Ph.D., *Associate Professor of Music.*
Margaret Creel, Ph.D., *Assistant Professor of History.*
Jacqueline Cogdell Djé Djé, Ph.D., *Acting Assistant Professor of Music.*
Halford Fairchild, Ph.D., *Assistant Professor of Psychology.*
Pierre-Michel Fontaine, Ph.D., *Acting Associate Professor of Political Science.*
Roderick Harrison, Ph.D., *Assistant Professor of Sociology.*
Robert Hill, MSc., *Assistant Professor of History.*
Romey Keys, Ph.D., *Assistant Professor of English.*
Vickie Mays, Ph.D., *Assistant Professor of Psychology.*
Claudia Mitchell-Kernan, Ph.D., *Associate Professor of Anthropology.*
Hector Myers, Ph.D., *Associate Professor of Psychology.*
J. H. Kwabe Nketia, B.A., *Professor of Music.*
Melvin Oliver, Ph.D., *Assistant Professor of Sociology.*
Warren Pinckney, Ph.D., *Acting Assistant Professor of Music.*
Richard Yarborough, Ph.D., *Assistant Professor of English.*

The Master of Arts Degree

Admission Requirements: Applicants for admission must possess a baccalaureate degree in the Social Sciences or the Humanities and show an interest in Afro-American studies either through their previous course of study or their future plans. Students are selected on the basis of the following criteria:

(1) Three academic letters of recommendation.
(2) A minimum of 3.00 or "B" average in the junior-senior years of college.
(3) A statement of purpose describing the applicant's background in Afro-American studies, proposed program of study, and future career plans.
(4) The results of the applicant's scores on the Verbal and Quantitative sections of the Graduate Record Examination.
(5) An original term paper or research paper which best expresses the applicant's interests and abilities.
(6) Other evidence of promise deemed relevant by the applicant such as work experience, accomplishments, or community and public service.

Admission to the program is limited to the Fall Quarter. Prospective students may write for brochures to the Interdepartmental Committee to Administer the M.A. Degree in Afro-American Studies, Center for Afro-American Studies, 3111 Campbell Hall, UCLA, Los Angeles, California 90024.

Advising: The Master of Arts Program in Afro-American Studies is supervised by an interdepartmental faculty committee appointed by the Dean of the Graduate Division. Upon admission, each student is assigned a faculty adviser from his/her major areas of concentration. It is with this adviser that the student formulates his/her program of study for the first year.

Students are expected to meet at least quarterly with their academic advisers, usually at the beginning to review their progress and to have their class program approved.

At the beginning of the second year in residence, students are expected to nominate a 3-person guidance committee which is subject to approval by the Interdepartmental Committee to Administer the M.A. Degree in Afro-American Studies. The guidance committee, which is usually chaired by the student's academic adviser, is responsible for supervision, review, and the final recommendation for acceptance of the candidate's thesis as partial fulfillment of the M.A. requirements.

Major Fields: The Afro-American Studies M.A. 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 departments, programs, and professional schools: Art, Dance, Economics, Geography, Psychiatry and Biobehavioral Sciences, Theater Arts, Folklore and Mythology, Latin American Studies, African Studies, Education, Library and Information Science, Management, Public Health and Social Welfare.

Foreign Language Requirement: M.A. candidates are required to satisfy the language requirement in one of the following ways: a) presentation of evidence of satisfactory completion of two year's coursework in a foreign language at the college level, b) passing a foreign language proficiency examination approved by the candidate's guidance committee and deemed appropriate by the Interdepartmental Committee to Administer the M.A. Degree in Afro-American Studies, or c) the demonstration of 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 two can be selected from upper-division listings. The program has a structured core of seven required courses. The student is required to take Afro-American Studies 200A (Afro-American History) and two courses from the Afro-American Studies 200B through 200E series. These courses should normally be taken in the first year of study. The second year is devoted to the acquisition of disciplinary competence in the student's chosen cognate field. Afro-American Studies 200A-B is required of all students, and in addition, Afro-American Studies 270A-B, a two quarter research seminar, is to be taken in conjunction with work in the discipline of each student's choice. This seminar is expected to facilitate completion of the student's thesis.

Thesis Plan: The guidance committee, constituted at the beginning of the second year of residence, supervises and reviews the students' progress on the thesis. When the thesis meets the standards of the guidance committee, the committee will recommend to the Interdepartmental Committee to Administer the M.A. in Afro-American Studies that the paper be accepted in fulfillment of the thesis requirement for the degree.

Time to Degree: It is estimated that six quarters in residence are required from the time of admission to award of degree. This presumes full-time student status and normal progression through coursework.

Disqualification and Appeal of Disqualification

Students enrolled in the M.A. Program in Afro-American Studies are required to meet a 3.0 grade point average. Anyone falling below that standard will be placed on academic probation and be subject to dismissal if the GPA is not brought up to acceptable standards the following quarter. Each quarter, students meet with their adviser and at the end of the first year in the program an evaluation meeting for all students is held. This serves as an official review of the students' progress towards completion of the requirements of the degree. Students who demonstrate problems in their academic work are generally required to take some remedial course of action. In cases where there is no improvement or where the students are unable to meet the requirements of the Program or the Graduate Division, the M.A. Committee will recommend their dismissal. Students who wish to do so may appeal this decision following the procedures established by the Graduate Division.

Interdisciplinary Courses

Graduate Courses

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

200B. Seminar in Political Economy. *Seminar.* Prerequisite: consent of instructor. This is a seminar on political economy with special reference to black political economy. While the focus will be the dynamics of allocation of wealth and power resources among the social classes and racial and ethnic groups in the United States, this will be done in a context that is at once comparative and international. Thus, the seminar will emphasize internationalism and transnationalism as well as the uniqueness of the Afro-American condition. It will attempt to relate the black condition in the United States to the socioeconomic system of this country, and also to compare it to the political, social and economic conditions of African peoples elsewhere. Mr. Fontaine

M200C. Selected Problems in Urban Sociology (Same as Sociology M262). Seminar. Prerequisite: consent of instructors. Mr. Harrison, Mr. Oliver

M200D. Afro-American Sociolinguistics: Black English. (Same as Anthropology M243Q. Prerequisite: consent of instructor. This seminar aims to provide basic information on Black American English, an important minority dialect in the United States. The social implications of minority dialects will be examined from the perspectives of their genesis, maintenance and social functions. Students will be acquainted with general problems and issues in the fields of sociolinguistics. These issues will be examined through a case study approach. Students will be required to conduct research in consultation with the instructor, as well as participate in group discussion. Ms. Mitchell-Kernan

M200E. Studies in Afro-American Literature (Same as English M273). Seminar. Prerequisite: consent of instructors. Intensive research and study of major themes, issues, and writers in Afro-American literature. Discussions and research on the esthetic, cultural, and social backgrounds of Afro-American writing. Mr. Yarborough, Mr. Keys

220A. Research Methods. Seminar. Prerequisite: consent of instructor. An introduction to a variety of research methods, including experimental, quasi-experimental, observational and survey research methodologies. The course will cover the following topics: the functions of research, research proposal writing, theory development and hypotheses testing, sampling theory, data collection, data processing and analysis and interpretation. Also included are the ethics of research and preparing the research report. Mr. Halford, Mr. Harrison

220B. African-American Psychology. Seminar. Prerequisite: consent of instructors. Survey of the psychological literature as it pertains to persons of African-American descent. The course provides a critical review of the implications of "mainstream" research of African-Americans. This approach includes a discussion of research on the family, academic achievement and psychological assessment (testing). A second focus is concerned with theoretical approaches advanced by African-American scholars: African philosophy, perspectives on racism in psychology, and research in the black community.

270A-270B. Research Seminar. *Seminar.* Prerequisite: consent of instructors. Designed to provide students with an opportunity to put their research skills into practical application. During the first quarter of this sequence, all of the students will meet under the direction of a faculty member and engage in a colloquium in which they will share conceptual schemata and research design. Students will spend the second quarter actually completing their projects.

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

American Indian Studies

(Interdepartmental)

(Office, 3220 Campbell Hall)

William Bright, Ph.D., *Professor of Linguistics.*
Robert Georges, Ph.D., *Professor of English.*
Carole Goldberg-Ambrose, J.D., *Professor of Law.*
Charlotte Heth, Ph.D., *Associate Professor of Music.*
Paul Kroskrity, Ph.D., *Assistant Professor of Anthropology.*
Thomas J. La Belle, Ph.D., *Professor of Education.*
Gary Nash, Ph.D., *Professor of History (Chair of the Program).*
Arnold Rubin, Ph.D., *Associate Professor of Art History.*
Melvin Seeman, Ph.D., *Professor of Sociology.*

The Master of Arts Degree

Admission Requirements. A bachelor's degree from an accredited undergraduate institution is required for admission to the M.A. Program in American Indian Studies. Prospective applicants must demonstrate interest in American Indian Studies either by formal coursework, independent study, or practical experience. As part of the application, applicants are required to submit a detailed account of their background, potential career plan, and interest in American Indian Studies. Preference will be 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 will be required to 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 is not required but all applicants are encouraged to take the examination and submit test results as part of the documents supporting their enrollment application. At least three faculty letters of recommendation must be submitted by each applicant. Admission to the Program is limited to the Fall Quarter. Prospective students may obtain application forms and further information by writing to the Committee to Administer the M.A. Degree in American Indian Studies, American Indian Studies Center, 3220 Campbell Hall, UCLA, Los Angeles, CA 90024, or by calling (213) 825-7315.

Advising. The M.A. Degree Program in American Indian Studies is supervised by an interdepartmental faculty committee. Upon admission, the Committee assigns each student a faculty adviser from his or her major area of concentration. Together, the student and adviser formulate the student's program of study for the first year. Students are expected to meet with their academic advisers at the beginning of each quarter to have their class program approved, and as often as necessary to have their progress reviewed.

At the beginning of the second year in residence, students are expected to select a guidance committee, which is subject to approval by the Committee to Administer the M.A. in American Indian Studies. The guidance committee, which should be chosen from disciplines within the student's area of concentration, will be responsible for the supervision, review, and the final recommendation for acceptance of the candidate's comprehensive examination or thesis as partial fulfillment of the M.A. requirements.

Major Fields or Subdisciplines. The American Indian Studies M.A. is an interdepartmental program with ten participating academic schools and departments: Anthropology, Art, Dance English, History, Law, Library and Information Science, Linguistics, Music, and Sociology. The ten 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 114A (American Indian Linguistics) or Linguistics 114B (American Indian Language Structures). Both courses, to be offered in alternate years, have been designed to show how languages are primary vehicles for understanding American Indian Culture.

Course Requirements.

(a) A minimum of ten courses will be required, at least seven of which must be chosen in the 200 series. Four courses are required: American Indian Studies M200A, 200B, 200C which must be taken in the first year, and Linguistics 114A or 114B, 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.

(b) All M.A. candidates in American Indian Studies will select one of the following areas of concentration: (1) History and Law, (2) Expressive Arts, (3) Social Relations, (4) Language, Literature, and Folklore. In addition to the four required courses, the student must complete a minimum of four courses in an 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 chosen from an approved list maintained by the Committee to Administer the M.A. Program.

Thesis Plan or Comprehensive Examination Plan. The candidate may choose 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 shall be selected by the candidate with the approval of the Committee to Administer the Program. Two members of the thesis committee, including the chair, should be chosen from disciplines with the candidate's area of concentration. Copies of the thesis must be submitted to each member of the candidate's committee by the fifth week of the quarter in which the candidate wishes to graduate. Students choosing the Comprehensive Examination Plan must demonstrate in written or oral examination their competency in the major and minor areas of study.

Time to Degree. The student is required to be in residence for a minimum of four quarters and should normally complete the program in two years.

500 Series Course Limitation. Two courses in the 500 series can be applied toward the 10-course requirement. However, only one 596 course may be applied toward meeting the Program requirement of seven graduate courses. Because the Program is interdepartmental, students must enroll in the 500 series through departments and must comply with departmental policy as to grading and units.

Interdisciplinary Courses

Required Upper Division Courses

Linguistics 114A. American Indian Linguistics. Survey of genetic, areal, and typological classifications of American Indian languages stressing representative features of phonology, morphology, and syntax; writing systems for American Indian languages; American Indian languages in social and historical context.

Linguistics 114B. American Indian Language Structures. Detailed introduction to the linguistic structure of three different American Indian languages, representing at least two separate genetic groupings.

Graduate Courses

M200A. Advanced Historiography—American Indian Peoples. (Same as History M200W). Mr. Morrison

200B. Cultural World Views of Native America. The course will explore written literary tests drawn from oral cultures and expressive cultural forms—dance, art, song, religious and medicinal ritual—in selected Native American societies. The instructors will introduce and review methodological approaches to the study of native cultures, from structural anthropology through ethnomusicology and folklore to modern literary analyses and direct field work.

Mr. Lincoln, Mr. Draper

200C. Contemporary Issues of the American Indian. This seminar is designed to introduce students to the most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world. It builds upon the historical background presented in American Indian Studies M200A and the cultural and expressive experience of American Indians presented in American Indian Studies 200B. Ms. Heth, Ms. Joe

Anatomy

(Office, 73-235 Health Sciences Center)

George W. Bernard, D.D.S., Ph.D., *Professor of Dentistry (Oral Biology) and Anatomy.*
P. Dean Bok, Ph.D., *Professor of Anatomy.*
Nathaniel A. Buchwald, Ph.D., *Professor of Biobehavioral Sciences and Anatomy in Residence.*
Carmine D. Clemente, Ph.D., *Professor of Anatomy and Director, Brain Research Institute.*
Edwin L. Cooper, Ph.D., *Professor of Anatomy.*
Jean S. de Vellis, Ph.D., *Professor of Anatomy.*
Earl Eldred, M.D., *Professor of Anatomy (Vice Chair, Gross Anatomical Teaching Resources).*
Jerome Engel, M.D., Ph.D., *Professor of Neurology and Anatomy.*
Louis J. Goldberg, D.D.S., Ph.D., *Professor of Dentistry (Oral Biology) and Anatomy.*
Roger A. Gorski, Ph.D., *Professor of Anatomy (Chair of the Department).*
Lawrence Kruger, Ph.D., *Professor of Anatomy and Anesthesiology.*
Richard N. Lolley, Ph.D., *Professor of Anatomy in Residence.*
David S. Maxwell, Ph.D., *Professor of Anatomy and Biobehavioral Sciences.*
Daniel C. Pease, Ph.D., *Professor of Anatomy.*
Charles H. Sawyer, Ph.D., *Professor of Anatomy.*
Arnold B. Scheibel, M.D., *Professor of Anatomy and Psychiatry.*
John D. Schlag, M.D., *Professor of Anatomy.*
José P. Segundo, M.D., *Professor of Anatomy.*
G. Douglas Silva, F.D.S., M.R.C.S., *Professor of Dentistry and Medicine.*
M.B. Sterman, Ph.D., *Professor of Anatomy and Biobehavioral Sciences in Residence.*
Anna N. Taylor, *Professor of Anatomy in Residence.*
Bernard Towers, M.B., Ch.B., (Liv.), M.R.C.S., L.R.C.P., *Professor of Pediatrics and Anatomy.*
Jaime R. Villablanca, M.D., *Professor of Biobehavioral Sciences and Anatomy in Residence.*
Charles D. Woody, M.D., *Professor of Psychiatry and Anatomy in Residence.*
Richard W. Young, Ph.D., *Professor of Anatomy.*
Mary A.B. Brazier, Ph.D., *Emeritus Professor of Anatomy and Physiology in Residence.*
John D. Frehch, M.D., *Emeritus Professor of Anatomy.*
H.W. Magoun, Ph.D., *Emeritus Professor of Anatomy.*
Richard E. Ottoman, M.D., *Emeritus Professor of Radiology and Anatomy.*
Reidar F. Sognnaes, Ph.D., *Emeritus Professor of Dentistry (Oral Biology) and Anatomy.*
Anthony M. Adinolfi, Ph.D., *Associate Professor of Anatomy and Biobehavioral Sciences.*
John H. Campbell, Ph.D., *Associate Professor of Anatomy.*
Emilio E. Decima, M.D., *Associate Professor of Anatomy.*
Ellen R. Dirksen, Ph.D., *Associate Professor of Anatomy.*
Ronald M. Harper, Ph.D., *Associate Professor of Anatomy.*
Guido A. Zampighi, D.D.S., Ph.D., *Associate Professor of Anatomy.*
Emery G. Zimmermann, M.D., Ph.D., *Associate Professor of Anatomy.*
John K. Lu, Ph.D., *Assistant Professor of Obstetrics and Gynecology and Anatomy.*
Michael Chase, Ph.D., *Professor of Physiology in Residence, and Research Anatomist.*
Earle E. Crandall, M.D., Ph.D., F.A.C.S., *Assistant Clinical Professor of Anatomy.*
Thelma Estrin, Ph.D., E.E., *Professor of Computer Sciences in Residence and Research Engineer in Anatomy.*
James D. Grant, M.D., *Assistant Research Anatomist.*
Stanley J. Gross, M.D., *Adjunct Professor of Anatomy.*
Frances S. Grover, Ph.D., *Adjunct Professor of Anatomy.*
Norio Kokka, Ph.D., *Assistant Research Pharmacologist in Anatomy.*
Raymond J. Last, M.D., F.R.C.S., *Visiting Professor of Anatomy.*
Bessie H. Lee, Ph.D., *Assistant Research Anatomist.*
Carlos A.E. Lemmi, Ph.D., *Adjunct Associate Professor of Anatomy and Adjunct Research Immunochemist in Surgery.*
Rafael Lorente de Nó, M.D., *Visiting Professor of Anatomy and Surgery.*
James F. McGinnis, Ph.D., *Adjunct Associate Professor of Anatomy.*
Dennis J. McGinty, Ph.D., *Adjunct Associate Professor of Psychology and Associate Research Anatomist.*
William T. O'Day, Ph.D., *Associate Research Anatomist.*
Anselmo R. Pineda, M.D., *Associate Clinical Professor of Anatomy.*
Madeleine L.H. Schlag-Rey, Ph.D., *Associate Research Anatomist.*
Sant S. Sekhon, Ph.D., *Associate Research Anatomist.*
Margaret N. Shouse, Ph.D., *Adjunct Assistant Professor of Anatomy.*
James R. Soares, Ph.D., *Assistant Research Anatomist.*
Elizabeth A. Stein, Ph.D., *Assistant Research Anatomist.*
Alfred Weinstock, D.D.S., Ph.D., *Clinical Professor of Dentistry and Anatomy.*
David I. Whitmoyer, Ph.D., *Adjunct Lecturer and Associate Research Anatomist.*
Aristo Wojdani, Ph.D., *Assistant Research Anatomist.*
Richard K. Wright, Ph.D., *Associate Research Anatomist.*
Wanda Wyrwicka, Ph.D., *Research Anatomist.*

Admission Requirements. Applicants must have a bacheior's degree in a physical or biological science or in a premedical curriculum. Introductory courses in zoology and vertebrate embryology are required, as well as one year of general and organic chemistry and one year of college physics. Deficiencies in these courses must be made up before the student is admitted. Courses in comparative anatomy, cell biology, genetics, elementary statistics and the philosophy of science are recommended.

Applicants must submit the results of the Graduate Record Examination including the Advanced Test in Biology or in their undergraduate major. We require three letters of recommendation from professors evaluating potential for successful completion of graduate studies and independent research.

Students seeking to enter the profession of anatomy must apply themselves directly to attaining the Ph.D. degree. The Department offers the M.S. degree only to individuals whose major interest and training lies in allied paramedical fields, postgraduate medicine or dentistry.

Further information and brochures can be obtained by writing to the Graduate and Program Secretary, Department of Anatomy, UCLA School of Medicine, Los Angeles, CA 90024.

Advising. Initially, members of the Graduate Student Affairs Committee advise students in selection of courses and other matters. Students are expected to affiliate by the end of the first year with a staff member with similar research interests and obtain more selective guidance.

Major Fields or Subdisciplines. The major fields in which graduate research may be undertaken in the Anatomy Department include a) neuroanatomy and neurophysiology, b) neuroendocrinology, and c) cell and developmental biology.

Disqualification. A student may be disqualified for (a) failure to maintain a grade point average of at least 3.0, (b) failure to comply with the graduate program requirements of the Department of Anatomy, or (c) violation of the standards of conduct as specified in the Student Conduct Code.

Appeals. The student may present an appeal of disqualification in writing to the Graduate Student Affairs Committee of the Department of Anatomy.

The Master of Science Degree

Course Requirements. A total of 36 units of coursework are required, 8 of which can be in the 500 series, and 20 of which must be in graduate courses. The following are required of all master's degree candidates: two of the major anatomy courses chosen from Anatomy 101, 206A-206B and 207A-207B; one departmental graduate seminar; other courses as necessary to the candidate's particular program.

Thesis or Comprehensive Examination Plan. Candidates may elect either the thesis or examination plan. For the thesis plan, a committee of the student's adviser and two department members approves the thesis proposal after all coursework is completed (usually at the start of the second academic year). For the examination plan, the candidate must demonstrate a knowledge of general principles of anatomy, as well as competence in a restricted area of science. A committee of three members, appointed by the Chair for each candidate, administers a written examination, restricted to basic anatomical science. If a student fails this examination, the opportunity for re-examination will be decided by the Graduate Student Affairs Committee.

Time to Degree. The time to degree is normally six quarters or two academic years.

500-Series Course Limitations. Eight units of Anatomy 598 (2-12 units, S/U grading) may be applied toward the total course requirement, and only 4 toward the minimum graduate course requirement.

The 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. Students with advanced training who have already passed courses similar to a), b), or c) may be asked to assist in their instruction.

2. Participation in at least two departmental seminars.

3. Completion of such other courses as are essential or supportive to the student's research interest.

4. Completion of a "Research Tool Requirement" which consists of the equivalent of 8 units of work selected by the student and his/her adviser to augment the dissertation project. This may be satisfied by a foreign language examination.

If the student elects the foreign language option, ability to read a foreign language must be shown by passing either (a) the Graduate School Foreign Language Test or (b) an intradepartmental exam.

If the student elects to take coursework to complete the Research Tool Requirement, a cohesive program of courses in a distinct discipline is selected which is in the student's general field of research. The program must be approved in writing by the faculty adviser and the Graduate Student Affairs Committee. Approval will not be given to courses which one would be expected to take to prepare for a major field of interest, nor to a program which appears to demand less preparation than that required for the equivalent of two courses (8 units) of upper division work.

Teaching Experience. Students are required to assist in the teaching of gross anatomy and one other major departmental course. Teaching activities occupy a limited portion of the student's time over a period of three quarters.

Written and Oral Qualifying Examinations. Successful completion of the qualifying examinations is expected. Part I is a written examination administered by an ad hoc committee appointed by the Chair, and is intended to evaluate the capacity to organize and integrate information derived from the five major required courses. Satisfactory completion of Part I is a necessary prerequisite for taking Part II, an oral examination conducted by the doctoral committee. The oral examination follows in two weeks to six months and often probes the student's dissertation proposal as well as an understanding of the field of specialization, the philosophy of science and the history of anatomy.

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 Department's program.

Final Oral Examination Following Completion of the Dissertation. A dissertation must be completed and successfully defended in a final examination. Only exceptionally will approval be given to a dissertation problem on a subject unrelated to the general fields of research followed by the various faculty members.

Time to Degree. Normal progress toward the Ph.D. is as follows:

Year 1. The three major Anatomy courses and Physiology.

Year 2. Biochemistry; departmental seminars; Research Tool; other courses relevant to the student's program; participation in teaching; preparation for qualifying examinations.

Year 3. Successful completion of the qualifying examinations; research and completion of activities of Year 2.

Year 4. Research and preparation and defense of dissertation.

Upper Division Courses

101. Microscopic Anatomy. (2 courses) Four three-hour sessions per week in the fall quarter. Prerequisite: enrollment in School of Medicine or consent of instructor. Microscopic study of the tissues and organs of the human body. Ms. Dirksen and the Staff

102A-102B. Gross Anatomy of the Human Body. (½ course, 2 courses) (Formerly numbered 100 and 102.) One hour of lecture and four hours of lab per week in the winter quarter; four hours of lecture and twelve hours of lab per week in the spring. Prerequisite: enrollment in School of Dentistry or consent of instructor. Course 102A is prerequisite to 102B. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Systemic and topographical human anatomy with dissection of the human cadaver. Emphasis on head and neck.

Mr. Harper and the Staff

103A-103B. Basic Neurology. (¼ course, ¾ course) Prerequisite: Medical school status or consent of instructor. Two four-hour sessions and one three-hour session per week of the last three weeks of the winter quarter; two two-hour sessions and two three-hour sessions per week in the spring quarter. Lectures, conferences, demonstrations and laboratory procedures necessary to an understanding of the function of the human nervous system. In-Progress grading.

Mr. Schlag and the Staff

104. Mammalian Histology. (1½ courses) Three three-hour sessions per week in the fall quarter. Prerequisite: enrollment in School of Dentistry 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

105A-105B. Gross Anatomy. See 207A-207B. Gross Anatomy.

106. Mammalian Neurology. One one-hour session and one four-hour session per week in the winter quarter. Prerequisite: enrollment in School of Dentistry or consent of instructor. Lectures, demonstrations and laboratories dealing with the fundamental structure and functional organization of the nervous system. Mr. Kruger and the Staff

Graduate Courses

201. Structure and Function of Cells and Tissues. (½ course) One hour of lecture and one of discussion per week in the fall quarter. Prerequisite: course 101 (which may be taken concurrently) and consent of instructor. Current topics on structural and functional aspects of microscopic anatomy. Graded on an S/U basis only. May be repeated for credit.

M203. Oral Embryology. (Same as Oral Biology M203.) Four hours per week in the spring quarter. 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

M206A-M206B. Neurosciences: The Introductory Course for Graduate Students. (1¼ courses, 1¼ courses) (Same as Neuroscience M206A-M206B.) Three hours of lecture and two hours of lab per week in the winter quarter; five hours of lecture and two hours of lab per week in the spring quarter. Prerequisite: a course (or equivalent) in basic and/or general physiology (such as Biology 171 or Physiology 101) or consent of instructor. This course is offered on an In Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Introductory course in the basic principles of the nervous system for graduate students as a prerequisite to more advanced courses. Fundamental approaches to neuroanatomy (winter quarter), neurophysiology and the brain mechanisms for behavior (spring quarter) will be stressed.
Mr. Decima, Mr. Scheibel and the Staff

207A-207B. Gross Anatomy. (2 courses, 1 course) Four four-hour sessions per week in the fall quarter; one three-hour, one four-hour and one five-hour session per week in the winter quarter (first seven weeks). Prerequisite: consent of instructor. Offered on an In Progress basis. Lectures and dissection of the human body. Medical students must enroll for Anatomy 105A-105B. Mr. Sawyer and the Staff

208A-208B. Electronics for Neuroscientists. Two hours of lecture and four hours of lab per week in the fall and winter quarters. Prerequisite: consent of instructor. To develop 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 grading only. Mr. Whitmoyer

209. Fine Structure and Function in the Central Nervous System. (½ course) Two one-hour sessions per week in the fall quarter of even-numbered calendar years. Prerequisite: Basic Neurology. Lectures and discussion of the fine structure of selected areas of the central nervous system, together with related electrical and biochemical patterns of activity.
Mr. Scheibel

210A-210B. Inflammatory Components in Neoplasia and Immunity. (½ course) Prerequisite: consent of instructor. One two-hour session per week in the fall and winter quarters. Fall quarter sessions consist of one-hour lectures on the various components of inflammation and other non-specific systems and their interrelation with neoplasia and specific immune phenomena. Current research literature is discussed during the second hour. The winter quarter sessions consist of presentations by invited guests involved in research in the specialty areas covered in the fall quarter. Organized discussions will follow these presentations. Mr. Lemmi and the Staff

211. Cellular Basis of Learned Behavior. (½ course) One two-hour lecture and demonstration per week in the fall quarter with labs scheduled by instructor when desirable. Prerequisite: Microscopic Anatomy, Mammalian Physiology. Anatomy and physiology of cerebral processes in alerting, learning, focusing attention and memory. Mr. Woody

212. Neural Mechanisms of Inhibition. (½ course) Two hours per week in the fall quarter of even-numbered calendar years. Prerequisite: Basic Neurology. A systematic consideration of inhibitory processes in the nervous system from the synapse to integrated behavior. Special attention is given to the recent concepts of inhibition at the behavioral level and their implications for learning, emotion and mental health.
Mr. Sterman

M213. Multigene Families. (Same as Biology M220.) Four hours of lecture or discussion per week in the fall quarter. Prerequisites: Biology M132 and 144 (or equivalent) and consent of instructor. Analysis of the molecular structure, developmental regulation, and evolution of multigene families. Topics to be discussed will include the hemoglobins, immunoglobulins, histones, ribosomal RNAs, satellite DNAs, and histocompatibility antigens. Grading basis S/U only. Mr. Campbell, Mr. Tobin

214. Data Acquisition in Behavioral Neurophysiology. Two hours per week in the fall quarter of odd-numbered calendar years. Prerequisite: course 211. Neurophysiological techniques in behavioral studies; data acquisition systems and computer analysis of neurophysiological data. Mr. Harper and the Staff

221. Gross Anatomy of the Head and Neck. Two hours of lecture, one hour of discussion and six hours of lab per week. Prerequisite: course 102A-102B or 105A-105B or 207A-207B. Intensive and advanced study of the head and neck with relevant study of the thorax and axilla. Special emphasis is placed on applied anatomy and on understanding basic organizational concepts. This course is intended for those who anticipate research or professional school teaching. Enrollment limited to 12. Offered in the spring quarter only of even-numbered years. Mr. Maxwell

M224A-M224B. Structure and Chemistry of Connective Tissue. (½ course each) (Same as Oral Biology M224A-M224B.) Two hours of discussion per week in the fall and winter quarters. Prerequisite: 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, non-collagenous proteins and glycoproteins, and glycosaminoglycans (mucopolysaccharides). The possible roles of cellular and non-cellular elements in the process of biological mineralization and correlation of biological processes to periodontal pathology. In Progress grading.
Mr. Weinstock and the Staff

M225. Biology of Bone. (½ course) (Same as Oral Biology M214.) Two hours of lecture and one hour of discussion per week in the winter quarter. 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

M226. Brainstem Control of Rhythmical Movements. (Same as Kinesiology M243; lecture is the same as Oral Biology 207, which is for ½ course credit 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 is on the interaction among brain stem reflexes, pattern generators and "voluntary" control centers. To be offered in the fall quarter. Mr. Goldberg, Mr. Chandler

251. Problems in Developmental and Comparative Immunology. (½ course) One two-hour session per week in the winter quarter. Prerequisite: consent of instructor. Review of current literature emphasizing early development and evolution of immune competence. Mr. Cooper

252. Seminar on Basic and Quantitated Neurophysiology. (½ course) One 90-minute session of lecture and one hour of discussion per week. Prerequisite: consent of instructor. Lecture series on basic neurophysiology. Early lectures by invited specialists on their specific fields. Later lectures, one per student and on a topic chosen and prepared in collaboration with the instructor. Offered in the spring quarter only of even-numbered years. Mr. Segundo

253. Communication and Coding in Nervous Systems. Two 90-minute sessions and one two-hour session per week. 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. For example: stability, neurons as analyzers of spike trains, identification of synaptic operators. Offered in the spring quarter only of odd-numbered years. Mr. Segundo

255A-255D. Seminar in Endocrinology. (½ course each) One two-hour lecture per week in the winter and spring quarters. Prerequisite: consent of instructor. Mr. Sawyer and the Staff

256. Seminar in Cell Structure and Function. (½ course) One hour of lecture and one of discussion per week in the winter and spring quarters. Prerequisite: consent of instructor. Selected topics in cell biology emphasizing those areas which are of current interest. Includes an analysis of the various techniques being used to study the cell.
Ms. Dirksen and the Staff

257. Journal Reviews in Experimental Anatomy. (½ course) One two-hour session per week. Research frontiers in various fields of experimental anatomy are reviewed and mutually discussed by graduate students and professors.

258. Seminars in Neuroscience. (½ course) Two hours per week in the fall quarter of odd-numbered years and winter quarter of even-numbered calendar years. Prerequisite: a course in basic neurology and course 209. Topics of current interest or ongoing research projects are presented, and both content and method of presentation are examined. May be repeated for credit. Mr. Scheibel

M260. Fundamental Concepts of Neuroendocrinology. (Same as Neuroscience M260.) Two hours of lecture and two hours of discussion per week in the winter quarter of odd-numbered calendar years. Prerequisite: Biochemistry 101C, Anatomy 206A and 206B, or consent of instructor. Basic concepts of neuroendocrine integration including analysis of the current literature and research techniques. Mr. Goraki

M261. Neuronal Circuit Analysis. (½ course) (Same as Neuroscience M261.) Three hours of lecture or discussion per week offered during the winter quarter. Prerequisite: Anatomy 206A and 206B or equivalent. The course will be run in a seminar form with strong emphasis on specific reading assignments. It will present an integrated view of neuronal circuit analysis at an advanced level and examine the layout and performance of a variety of basic neuronal circuits serving different control functions.
Mr. Schlag

265. Evolution of Cancer. (½ course) Two hours of lecture or discussion per week during the winter quarter. 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

390A-390B. The Peer Review System. (½ course each) Two hours of discussion per week in the winter and spring quarters of odd-numbered calendar years. Prerequisite: advancement to candidacy in integrative or systems biology or consent of instructor. Offered on an In Progress basis. 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. Mr. Goraki

400. Communicating Scientific Information. (½ course) Two hours of lecture per week in the winter quarter. Prerequisite: enrollment as a candidate for advanced degree in Anatomy. Student papers and lectures serve 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. To be graded S/U.

501. Cooperative Program. (½ to 2 courses) Prerequisite: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596. Directed Individual Study or Research. (½ course to 3 courses)

597. Preparation for the Master's Comprehensive Examination or the Doctoral Qualifying Examination. (½ course to 3 courses)

598. Thesis Research for Master's Candidates. (½ course to 3 courses)

599. Dissertation Research for Ph.D. Candidates. (½ course to 3 courses)

Medical History Division

(Department of Anatomy)

Franklin D. Murphy, M.D., Sc.D., *Professor of Medical History.*

Mary A.B. Brazier, Ph.D., *Emeritus Professor of Anatomy and Physiology in Residence.*

John Field, Jr., Ph.D., *Emeritus Professor of Medical History and Physiology.*

L.R.C. Agnew, M.D., *Associate Professor of Medical History.*

Robert G. Frank, Jr., Ph.D., *Associate Professor of Medical History and History.*

Ynez V. O'Neill, Ph.D., *Associate Professor of Medical History in Residence.*

Elizabeth R. Lomax, M.D., Ph.D., *Adjunct Lecturer and Associate Research Medical Historian.*

Frances Keddie O'Malley, M.D., *Research Medical Historian.*

Upper Division Courses

107A-107B. Historical Development of Medical Sciences. Mr. Agnew, Ms. O'Neill

M108A-M108B. History of Biological Sciences. (Same as History M195F-M195G.) Mr. Frank

110. Medicine and Society in 20th Century America. Mr. Frank

Graduate Courses

240A-240B. History of Medical Sciences. (½ course each) One hour of lecture per week in the fall and winter quarters. Survey of the development of scientific and medical thought from ancient times to the present.

241A-241B. History of Clinical Sciences. (½ course each) One hour of lecture per week in the fall and winter quarters. 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. Mr. Agnew

242. History of Pathology. (¼ course) One hour per week in the fall quarter. 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. Mr. Agnew

243. History of Surgery. (¼ course) One hour per week in the winter quarter. 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. Mr. Agnew

244. History of American Medicine. (¼ course) One hour per week in the spring quarter. Survey of the history of medicine in the United States from the colonial period to the present. Mr. Agnew

246. History of Neurophysiology: Its Impact on Psychology and Medicine. (½-1 course) Eight one-hour lectures and eight two-hour seminars in the winter quarter covering 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. The seminars will complement the lectures mainly through discussion of the interaction of neurophysiological ideas with contemporaneous philosophy and medicine. The lectures may be taken independently.
Ms. Brazier, Ms. O'Neill, Ms. Lomax

250. History of Medical Psychology. (½ course) One hour per week in the winter quarter. An examination of the themes underlying modern mental health theories. Beginning with a review of contemporary thinking, the lectures focus upon the various factors shaping present concepts of mental disorders, and provide a framework for the understanding of current issues. Ms. Lomax, Ms. O'Neill

Individual Study and Research

596. Directed Individual Studies in Medical History. Investigation of subjects in medical history selected by students with the advice and direction of the instructor in the fall, winter and spring quarters. Individual reports and conferences.

599. Research for and Preparation of the Doctoral Dissertation. (1 to 2 courses) Investigation of materials relative to the doctoral dissertation, their evaluation and written presentation.

Anesthesiology

(Office, 56-125 Health Sciences Center)

Robert O. Bauer, M.D., *Professor of Anesthesiology and Pharmacology.*

J. Weldon Bellville, M.D., *Professor of Anesthesiology.*

Walter Comer, M.D., *Adjunct Professor of Anesthesiology.*

Edward Deland, Ph.D., *Adjunct Professor of Anesthesiology.*

Werner E. Flacke, M.D., *Professor of Anesthesiology in Residence.*

Ronald L. Katz, M.D., *Professor of Anesthesiology (Chair of the Department).*

Lawrence Kruger, Ph.D., *Professor of Anesthesiology and Anatomy.*

Richard Patterson, M.D., *Professor of Anesthesiology.*

Eduardo Rubinstein, M.D., Ph.D., *Professor of Anesthesiology and Physiology in Residence.*

Stuart F. Sullivan, M.D., *Professor of Anesthesiology (Executive Vice Chair of the Department).*

Leonard F. Walts, M.D., *Professor of Anesthesiology.*

John B. Dillon, M.D., *Emeritus Professor of Anesthesiology.*

Joan W. Flacke, M.D., *Adjunct Associate Professor of Anesthesiology.*

Ching-Muh Lee, M.D., *Associate Professor of Anesthesiology.*

Jordan D. Miller, M.D., *Associate Professor of Anesthesiology.*

Robert C. Reynolds, M.D., Ph.D., *Associate Professor of Anesthesiology.*

Joseph Cadranel, M.D., *Assistant Clinical Professor of Anesthesiology.*

Selma H. Calmes, M.D., *Assistant Professor of Anesthesiology in Residence.*

Kenneth A. Conklin, M.D., Ph.D., *Assistant Professor of Anesthesiology.*

Theresa Ferrer-Brechner, M.D., *Adjunct Associate Professor of Anesthesiology.*

George P. Herr, M.D., *Adjunct Associate Professor of Anesthesiology.*

Kumiko Iwamoto, M.D., *Assistant Professor of Anesthesiology.*

Robert D. Kaufman, M.D., *Assistant Professor of Anesthesiology.*

Richard J. Kroening, M.D., *Adjunct Associate Professor of Anesthesiology and Dentistry.*

Arnold Lee, *Adjunct Assistant Professor of Anesthesiology.*

Stanley Schneider, M.D., *Assistant Clinical Professor of Anesthesiology.*

Janice Silverton, M.D., *Adjunct Assistant Professor of Anesthesiology.*

Young-Zin Sohn, M.D., *Adjunct Assistant Professor of Anesthesiology.*

Susan Ward, Ph.D., *Assistant Professor of Anesthesiology in Residence.*

•

John DeAngelis, M.D., *Clinical Instructor of Anesthesiology.*

Vladimir Golovchinsky, M.D., *Assistant Researcher in Anesthesiology.*

Errol Hackner, M.D., *Clinical Instructor of Anesthesiology.*

Leah E. Katz, CRNA, B.S.N., M.A., *Adjunct Associate Professor of Anesthesiology.*

Felice Miller, Ph.D., *Clinical Instructor of Anesthesiology.*

Ronald Wender, M.D., *Clinical Instructor of Anesthesiology.*

The Master of Science Degree (Nurse Anesthesia)

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.

Admission Requirements

1. Graduation from an accredited nursing program satisfactory to the Program of Nurse Anesthesia and the UCLA Graduate Division. Students may be required to enroll in certain additional undergraduate courses prior to final consideration of the application by the Program.

2. 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.

3. Completion of a minimum of one year experience as a graduate nurse in an acute care area of nursing, preferably an intensive care unit.

4. Professional and academic competence attested through three letters of recommendation.

5. Graduate record examination aptitude test results submitted to the Program of Nurse Anesthesia.

6. 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

i. A course in Methods of Research is highly recommended.

7. A scholarship record satisfactory to the Graduate Division, University of California, Los Angeles, and the Program of Nurse Anesthesia. Transcripts must be sent to both the Graduate Division and the Program of Nurse Anesthesia.

8. Interview with the Program Director or designee and observation in the clinical practicum.

9. Interview with members of the final selection committee.

10. Approximately five to six students will be selected for admission in September by the final selection committee which meets annually in January.

Information regarding the program may be obtained by writing for the departmental brochure at the following address: Program of Nurse Anesthesia, UCLA Center for Health Sciences 56-125, Los Angeles, California 90024.

Additional information may be obtained by phone at (213) 825-4123. All applicants must apply to both the Department and the Graduate Division.

Separate applications are needed for the Department of Anesthesiology and for the Graduate Division. Departmental applications may be obtained from the above address.

Advising. All entering students are assigned an adviser on the first day of the quarter. Appointments with an adviser may be made prior to that time by contacting the Program.

Monthly written clinical evaluation by all clinical faculty with whom the student has worked and subsequent counseling by an assigned faculty member or the Graduate Adviser occurs during the first quarter. In subsequent quarters, overall assessment of the student's progress is made through tri-monthly written evaluation and counseling.

All students meet with the Graduate Adviser for at least one scheduled period each quarter of the curriculum. Written records are kept of all evaluations and interviews.

Graduate Adviser: Leah Katz, UCLA Center for Health Sciences 56-125, Los Angeles, California 90024 (213) 825-4123.

Foreign Language Requirement. There is no foreign language requirement for the M.S. degree.

Course Requirements.

Total courses required for the degree: 13¼
Total graduate courses required for the degree: 13¼

Required graduate courses include: 210A, 210B, 210C, 215A, 215B, 220A, 220B, 220C, 221, 222, 225, 290, 400A, 400B, 400C, 400D, 400E, 400F, 400G, 401, 402, 598A and 598B.

Thesis or Comprehensive Examination Plan

Written Qualifying Examination: A student may elect either an oral comprehensive examination or a prepared thesis option for degree completion. Each student shall take a written comprehensive examination for course completion, regardless of his/her choice of options.

Thesis Plan: The 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 the second year. The thesis committee consists of a minimum of three Department members.

Oral Qualifying Examination: Students electing this option will have demonstrated didactic and clinical competence in the field, and completed selected Physiology or Pharmacology and Education courses. The Graduate Division will be notified of the readiness for the examination and the Committee for Examination will consist of: Chair, Department of Anesthesiology and two additional faculty members, at least one representing a related field such as physiology, anatomy or pharmacology.

Students electing the oral examination option 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. Examinations are offered quarterly.

Time to Degree. Eight quarters

500 Series Course Limitations. Completion of 597, Preparation for the Comprehensive Examination, or 598A and 598B, Research in Anesthesia, are required for program completion. 598A may be repeated two times but only two of the courses will count toward the degree. Letter grading is utilized in 500 series courses.

Disqualification and Appeal of Disqualification. The Program reserves the right to dismiss any student who appears academically, clinically and/or personally unable to carry out the professional responsibility of the nurse anesthetist. The didactic portion of the curriculum follows UCLA academic requirements and conditions under which students are subject to academic dismissal are those found in the *UCLA Graduate Catalog*. For the clinical portion of the program, courses (400A, B, C, D, E, F, G) the clinical evaluation committee of the Department recommends dismissal to the Program Director and Department Chair. They will review the recommendation with the student and determine subsequent action which may include dismissal. The Department maintains documentation of all clinical and didactic work. Each student is evaluated on a trimonthly basis in written form. An appeal process is available within the Department and terminates in a due process committee which includes outside representation. All students must maintain a GPA of 3.0 in order to remain in good academic standing.

Other relevant information.

1. It is necessary that students complete all didactic and clinical work to earn the Master of Science degree.

2. The Program does not discriminate on the basis of race, color, national origin, religion, sex or handicap unless the handicap is determined by the Selection Committee to be of such nature as to preclude the safe clinical practice of anesthesia.

3. All students must complete a minimum of 550 cases as the primary anesthetist for program completion.

4. All students 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. (½ course) 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. (½ course) Lecture, two hours; discussion, one hour. Prerequisite: Chemistry and Physics of Nurse Anesthesia I. 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. (½ course) Lecture, two hours; discussion, one hour. Prerequisite: Chemistry and Physics of Nurse Anesthesia II. 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. (¼ course) 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

220A. Respiratory Anatomy and Physiology for Nurse Anesthetists I. (½ course) 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. (½ course) 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 (½ course) 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. (¼ course) 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. Katz

M222. Biological Control Systems. (Same as System Science M222F.) Lecture, four hours. Prerequisite: Engineering 122A 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 (Sp)

223. Anatomy and Physiology of the Endocrine and Excretory System for Nurse Anesthetists. Lecture, four hours; discussion, one to two hours. An integrated study of the endocrine and excretory systems as relevant to the management of anesthesia administration. Ms. Katz

225. Anatomy and Physiology of the Nervous System for Nurse Anesthetists. Lecture, four hours; discussion, one to two hours. An integrated study of the anatomy and physiology of the nervous system as it relates to the management of anesthesia administration. Mr. Skolnick

298. Anesthesia Seminar for Nurse Anesthetists. (½ course) Discussion, two to three hours. Discussion of special problems in anesthesia of interest to the student. Mr. Katz and the Staff

400A. Basic Clinical Anesthesia for Nurse Anesthetists I. (½ course) Lecture, three hours; laboratory, thirty hours. Prerequisite: Fundamentals of Anesthesia Practice for Nurse Anesthetists. Correlation of techniques of anesthesia administration with basic science knowledge as applied in the clinical area with supervised practice. Graded S/U only.

400B. Basic Clinical Anesthesia for Nurse Anesthetists II. (½ course) Lecture, two hours; laboratory, thirty hours. Prerequisite: Basic Clinical Anesthesia for Nurse Anesthetists I. A continuation of the practice of techniques of anesthesia administration as applied in the clinical area with supervised practice. Graded S/U only.

400C. Basic Clinical Anesthesia for Nurse Anesthetists III. (½ course) Lecture, two hours; laboratory, thirty hours. Prerequisite: Basic Clinical Anesthesia for Nurse Anesthetists II. A continuation of techniques of anesthesia administration as applied in the clinical area with supervised practice. Graded S/U only.

400D. Clinical Anesthesia for Nurse Anesthetists IV. (½ course) Lecture, two hours; laboratory, thirty hours. Prerequisite: Basic Clinical Anesthesia for Nurse Anesthetists III. A practice of refinement of anesthesia techniques with emphasis on specialized areas of anesthesia administration with supervised practice. Graded S/U only.

400E. Clinical Anesthesia for Nurse Anesthetists V. (½ course) Lecture, two hours; laboratory, thirty hours. Prerequisite: Clinical Anesthesia for Nurse Anesthetists IV. A practice of refinements of anesthesia techniques with emphasis on specialized areas of anesthesia administration with supervised practice. Graded S/U only.

400F. Clinical Anesthesia for Nurse Anesthetists VI. (½ course) Lecture, two hours; Laboratory, thirty hours. Prerequisite: Clinical Anesthesia for Nurse Anesthetists V. A practice of refinements of anesthesia techniques with emphasis on specialized areas of anesthesia administration with supervised practice. Graded S/U only.

400G. Clinical Anesthesia for Nurse Anesthetists VII. (½ course) Lecture, two hours; laboratory, thirty hours. Prerequisite: Clinical Anesthesia for Nurse Anesthetists VI. A practice of refinements of anesthesia techniques with emphasis on specialized areas of anesthesia administration with supervised practice. Graded S/U only.

401. Orientation to Nurse Anesthesia. (½ course) Lecture, two hours; discussion one-half 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. Lecture, six hours; discussion, one to two hours. Introduction to basic principles of anesthesia administration including pre-anesthetic assessment, physical examination, techniques and procedures and anesthesia for specialized techniques and surgery. Ms. Katz

597. Preparation for the Master's Oral Qualifying Examination. (½ course) 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

598A. Research in Anesthesia I. (½ course) Prerequisite: consent of instructor. Opportunity is presented to pursue anesthesia research outlets for thesis preparation. Independent research of quality suitable for publication is required. This may be elected instead of the oral comprehensive examination for completion of the Master's Program. Mr. Katz

598B. Research in Anesthesia II. (½ course) Prerequisite: Research in Anesthesia I. Opportunity is presented to pursue anesthesia research outlets for thesis preparation. Independent research of quality suitable for publication is required. This may be elected instead of the oral comprehensive examination for completion of the Master's Program. May be repeated two times for credit. Mr. Katz

Anthropology

(Office, 341 Haines Hall)

Christopher Donnan, Ph.D., *Professor of Anthropology.*
Walter R. Goldschmidt, Ph.D., *Professor of Anthropology.*
Peter Hammond, Ph.D., *Professor of Anthropology.*
James N. Hill, Ph.D., *Professor of Anthropology.*
Allen W. Johnson, Ph.D., *Professor of Anthropology.*
Jacques Maquet, Ph.D., *Professor of Anthropology (Chair of the Department).*
Clement W. Meighan, Ph.D., *Professor of Anthropology.*
Michael Moerman, Ph.D., *Professor of Anthropology.*
Henry B. Nicholson, Ph.D., *Professor of Anthropology.*
Wendell H. Oswalt, Ph.D., *Professor of Anthropology.*
James R. Sackett, Ph.D., *Professor of Anthropology.*
Johannes Wilbert, Ph.D., *Professor of Anthropology.*
Bobby J. Williams, Ph.D., *Professor of Anthropology.*
Ralph L. Beals, Ph.D., *Emeritus Professor of Anthropology.*
Joseph B. Birdsell, Ph.D., *Emeritus Professor of Anthropology.*
Hilda Kuper, Ph.D., *Emeritus Professor of Anthropology.*
William A. Lessa, Ph.D., *Emeritus Professor of Anthropology.*
Timothy Earle, Ph.D., *Associate Professor of Anthropology.*
Claudia Mitchell-Kernan, Ph.D., *Associate Professor of Anthropology.*
Philip L. Newman, Ph.D., *Associate Professor of Anthropology.*
Dwight Read, Ph.D., *Associate Professor of Anthropology.*
Jennie Joe, Ph.D., *Assistant Professor of Anthropology.*
Gail E. Kennedy, Ph.D., *Assistant Professor of Anthropology.*
Paul Kroskrity, Ph.D., *Assistant Professor of Anthropology.*
Nancy E. Levine, Ph.D., *Assistant Professor of Anthropology.*
Eugene L. Mendonsa, Ph.D., *Assistant Professor of Anthropology.*
Robert J. Russell, Ph.D., *Assistant Professor of Anthropology.*
Dorothy Cheney Seyfarth, Ph.D., *Assistant Professor of Anthropology.*
Robert M. Seyfarth, Ph.D., *Assistant Professor of Anthropology.*
Carlos G. Velez-I, Ph.D., *Assistant Professor of Anthropology.*
Nicholas Blurton Jones, Ph.D., *Professor of Anthropology and Education.*
C. Rainer Berger, Ph.D., *Professor of Anthropology, Geography and Geophysics.*
William O. Bright, Ph.D., *Professor of Linguistics and Anthropology.*
Pamela J. Brink, Ph.D., *Associate Professor, School of Nursing and Anthropology.*
Bernard G. Campbell, Ph.D., *Adjunct Professor of Anthropology.*
Brian Dillon, Ph.D., *Lecturer in Anthropology.*
Robert B. Edgerton, Ph.D., *Professor of Anthropolgy and Psychiatry.*
John G. Kennedy, Ph.D., *Professor of Psychiatry and Anthropology.*
L.L. Langness, Ph.D., *Professor of Anthropology and Psychiatry.*
Donald G. Lindburg, Ph.D., *Adjunct Associate Professor of Anthropology.*
Larry Mai, Ph.D., *Adjunct Assistant Professor of Anthropology and Surgery Orthopedics.*
Merrick Posnansky, Ph.D., *Professor of History and Anthropology.*
Douglas Price-Williams, Ph.D., *Professor of Anthropology and Psychiatry.*
Gerardo Reichel-Dolmatoff, Ph.D., *Adjunct Professor of Anthropology.*
Susan Scrimshaw, Ph.D., *Associate Professor of Anthropology and Public Health.*
Hiroshi Wagatsuma, Ph.D., *Adjunct Professor of Anthropology.*
Thomas S. Weisner, Ph.D., *Associate Professor of Anthropology and Psychiatry.*

Major Fields. Anthropology is unusual in the modern scholarly world in its breadth of interest, ranging from the strictly biological through the social sciences to humanistic studies. The Department recognizes five Fields as follows:

1) *Archaeology* studies the cultures of the past on the basis of the material evidence left in the ground; 2) *Biological Anthropology* studies the evolution of man, the biological background to human behavior and the genetic diversity of mankind and the evolutionary ecology of primate phylogeny; 3) *Cultural Anthropology* studies ideational systems such as religious beliefs, philosophical conceptions, world views, arts and technologies, as transmitted from generation to generation; psychological anthropology and symbolic studies are especially emphasized; 4) *Linguistic Anthropology* examines the diversity of languages and other communicative systems, the sociocultural patterning of their use, and the role of language and linguistics in anthropological theory and method; and 5) *Social Anthropology* studies the structure of human communities and institutionalized social interactions systems.

Students taking advanced degrees in Anthropology are expected to have a basic background in these five Fields (see M.A. requirements).

Four other categories of course offerings are recognized by the Department, courses which are not limited to one field.

Program for Psycho-cultural Studies is an interdisciplinary approach blending psychological anthropology and cross cultural psychology.

Regional Cultures includes courses which describe the contemporary cultures and civilizations of major areas of the world.

The Anthropology of Social Action includes those courses that direct attention to the anthropological understanding of diverse matters pertaining to critical issues in the contemporary world and program of change. The following topics are included: development in Third World countries, health issues, ethnic relations, and the roles of women in society.

History and Theory are courses that deal in-depth with the history of anthropological thought and problems of anthropological methods of research (as distinct from courses in fieldwork or laboratory methods special to the several fields).

Admission Requirements. Admission to the graduate program in Anthropology is ordinarily restricted to the Fall Quarter. In the event you wish to make application and be considered 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 the student's 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 students who have a record showing such completion 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:

Fall Quarter 1983 — December 30, 1982
Winter Quarter 1984 — October 1, 1983
Spring Quarter 1984 — December 30, 1983

The following documents must be received by Graduate Admissions, Graduate Division, 1247 Murphy Hall, UCLA, Los Angeles, California, 90024:

1. Official Application,
2. Official transcripts of record, in duplicate, from each college or university at which work has been completed,
3. Statement of Purpose.

In addition to the documents required by the University, students must submit directly to the Graduate Counselor, Department of Anthropology, 341 Haines Hall, Los Angeles, California, 90024:

1. Three letters of recommendation (preferably from Anthropologists),
2. GRE Scores,
3. Research of Term Paper.

Once the applicant's file is complete it is submitted to the Departmental Admissions Committee. This committee reviews the file and forwards it to faculty members with related intellectual interests for sponsorship into the graduate program. The Department requires the sponsorship of two faculty members before a student is accepted. Upon departmental acceptance into our program, the recommendation is forwarded to the Graduate Admissions Office and the applicant will be officially notified by the Dean of the Graduate Division.

For further information on the departmental program, in general, a graduate syllabus is available which may be obtained without charge by writing to the above departmental address.

Disqualification and Appeal of Disqualification. A graduate student failing to maintain the University scholarship requirements, or the Departmental degree requirements will be recommended for termination from graduate status to the Dean of the Graduate Division. This recommendation will be made by the Chair of the Department after a vote of the faculty at the quarterly student review. Before the recommendation is sent to the Dean of the Graduate Division, the student will be notified and given two weeks (upon receipt of the notification) to respond to the decision in writing to the Chair. The matter will be reviewed by the Departmental Executive Committee which will make the final Departmental recommendation to the Dean.

The Master of Arts Degree

Advising. All questions regarding graduate admissions and graduate student procedures are handled by the Graduate Counselor (Department of Anthropology, 341 Haines Hall, (213) 825-2511).

The student is expected to contact his or her sponsors upon arrival to the Department to consult with them on guidance and formulating a program of courses. One of the sponsors will serve the student as chair of the M.A. Guidance Committee, and must thereafter be consulted at least once each quarter for evaluation of progress and approval of the Study List. The Committee chair (or if unavailable, the other sponsor or alternate committee member) must sign the official Study List Card to signify approval of the student's program at the beginning of each quarter. By the second quarter of residence, the student is expected to have selected a committee of three faculty members, at least one of whom must have the rank of Associate or Full Professor, to serve on the M.A. Guidance Committee.

This Guidance Committee is responsible for assisting the student in his or her progress toward the M.A. degree. It advises the student with respect to course program, evaluates the M.A. Examination, helps in the formulation of the student's M.A. paper and evaluates it, and finally recommends to the Department Faculty whether the student should be awarded the M.A., be admitted to the Ph.D. program, or be terminated. The Department, at the quarterly student review, makes the decision on these matters. The student will be notified of the departmental action by mail.

Students may at any time request changes in the membership of their Guidance Committee by formal written request. Approval of such a request requires written consent of both the newly added and the replaced committee member.

The Graduate Counselor maintains a file on each student which includes the materials submitted in the application, course grades and individual evaluations submitted by faculty members and all actions taken that fulfill requirements for the degree.

It is the student's responsibility to ensure that the materials listed below have been submitted to the Graduate Counselor:

1. The current composition of the M.A. Guidance Committee;
2. The departmental form indicating how the M.A. language requirement was fulfilled;
3. Advancement to Candidacy form indicating coursework completed;
4. The M.A. research paper and signature page.

The file will be open to students on written request to the Chair of the Department.

Foreign Language Requirement. M.A. language requirements for foreign language competency may be met by:

1. Passing the Educational Testing Services (ETS) examination in a foreign language with a score of 500 or better (may be taken at any time including undergraduate years);
2. Other demonstrations of proficiency in a foreign language by petition to the Chair of Anthropology Department. Such demonstrations may require examination by examiners within or outside the Department of Anthropology. Bases for acceptable petitions include language training in the National Defense Institute, State Department, or Peace Corps, successful work in foreign universities in which the teaching is in another language, or other evidence that the student has foreign language proficiency.

Students whose native language is not English may petition to have the requirement waived. They are in effect credited with English as a second language. Formal written application for such waiver should be submitted to the student's Guidance Committee.

Core Course Requirements. Students may demonstrate their basic knowledge in the five Fields by: 1) taking (either as undergraduates or graduates) the core course with a passing grade of B or better, 2) by petition that work taken elsewhere constitutes the equivalent of such courses, or 3) by passing a special examination in each, in the spring quarter of their first year in residence. Courses taken while in graduate status 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 two courses (8 units) per quarter, but it is highly recommended that students take

three courses a quarter (12 units). An M.A. degree requires nine courses (36 units) with at least a 3.0 grade point average. All of the nine courses for the M.A. must be taken for a letter grade.

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 the approval of the student's Guidance Committee;

4. Two courses may be anthropology independent studies (see Department for course numbers) with the approval of the student's committee.

Master's Examination and Research Paper. The Department Master's Degree Program is on the Comprehensive Examination Plan. The examination consists of two parts: 1) a written one-day examination and 2) a master's paper.

The Written Examination. Each M.A. candidate must pass an examination in one of the five Fields to demonstrate competence and intellectual promise in the field of the student's specialization. This examination is to be taken in the third quarter of residence and may be taken a second time the following year, if a student fails to pass on the first effort. The M.A. examination for each Field will be written by those faculty members identified with the Field, but each student's examination will be evaluated by his or her M.A. Guidance Committee.

The Master's Paper. Each student is to submit an original paper based on field, laboratory or library research. This paper is due by the end of the student's fifth quarter of residence. The paper is intended to demonstrate the student's ability to generate or assemble a body of data, analyze it and indicate its relevance to established anthropological thought, and to demonstrate the student's ability to write lucid prose. The final paper should not exceed 40 pages in length and shall be presented in a form suitable for journal publication. The student's Guidance Committee is responsible for assisting the student in formulating a research paper, monitoring its progress, and evaluating the paper when submitted. In this assignment, students are urged to work closely with their adviser, within the constraints in time and resources available to them.

Time to Degree. Normal progress toward the degree is as follows:

Requirements	Expected by end of
M.A. Examination	3rd quarter
Core Course Requirements (if needed)	3rd quarter
M.A. Language*	5th quarter
M.A. Research Paper	5th quarter
36 units coursework	6th quarter

*must be completed before advancement to candidacy to the M.A. Degree.

500 Series Courses Limitations.

Course Number	Unit Value	Type of Grading
596	4-8	grade or S/U
598	4-8	S/U only

Eight units of 596 taken for a letter grade may apply toward the total course requirement for the M.A. with 4 of these units applicable to the minimum graduate course requirement.

Students Entering with M.A. Degree. Students entering the Department with an M.A. in Anthropology from another university or in a field other than anthropology will be expected to demonstrate their competence in the five Fields, take the M.A. examination, establish their competence in a foreign language and submit a master's paper, but have no course responsibilities with respect to the M.A. degree. Such students may submit their prior master's theses or a research paper written as a graduate student (whether or not in anthropology) to fulfill this requirement, for evaluation by their M.A. Guidance Committee. Only after satisfying these requirements will a student be admitted into the Ph.D. program.

The Ph.D. Degree

Advising. All questions regarding graduate admissions and graduate student procedures are handled by the Graduate Counselor (Department of Anthropology, 341 Haines Hall, (213) 825-2511).

Students who have completed the M.A. requirements and have been recommended for the Ph.D. program will nominate the three members of the Departmental Doctoral Committee (at least one of whom must have the rank of Associate or Full Professor). This new committee may, but need not, consist of the same faculty members as the M.A. Guidance Committee. This committee supervises the Ph.D. language requirement and administers the Written Qualifying Examinations. A student may change the membership of the Departmental Doctoral Committee by formal written request, providing that both the faculty members leaving and joining the committee approve the change in writing.

Each student's program must be approved by the chair of the student's Departmental Committee (or if unavailable, by another member of the Committee), who must sign the student's official Study List Card.

After fulfilling the Ph.D. level foreign language requirement (preferably by the third quarter of post M.A. residency), the student nominates the 5-person Ph.D. Doctoral Committee consisting of the three departmental members and two members from other departments. This must first be done informally on a departmental form and submitted to the faculty for approval, after which the committee is formally nominated to the Dean of the Graduate Division, who officially appoints it. The Committee assesses the student's overall progress, administers the Ph.D. Oral Qualifying Examination, supervises the student's dissertation research, and administers the Final Oral Examination upon completion of the dissertation.

Foreign Language Requirement. The student must satisfy the Ph.D. language requirement before formally nominating the 5-member Ph.D. Committee and before taking the Qualifying Examinations. Any language useful for field study and/or library research is acceptable, and the format of the examination is determined by the student's Departmental Doctoral Committee. The student must submit to his or her committee a comprehensive annotated bibliography, constituting a corpus of works relevant to his or her field of specialization and must demonstrate familiarity with the content of the bibliography by taking a written or oral examination. Students who speak English as a second language may waive the language requirement by petition with the approval of their Departmental Doctoral Committee. Under unusual circumstances, the Department will consider alternate means of fulfilling the requirement by petition to the Departmental Doctoral Committee, the Department Chair, and the Dean of the Graduate Division. The annotated bibliography and examination must be placed in the student's file.

Course Requirements. The student must be in residence for one year between receipt of the M.A. degree and advancement to candidacy. During this time, coursework must be done with at least three different members of the faculty. Students must be enrolled in a minimum of 8 units at all times unless on an official leave of absence.

Written and Oral Examinations. The timing of the qualifying examinations will be set by the student in consultation with members of the Doctoral Committee. It may not take place earlier than the third quarter after receiving the M.A. degree. The Written Qualifying Examination is conducted by the 3-member Anthropology Doctoral Committee who will examine the student in three subfields of his or her choice. Two of these three subfields will be drawn from a list of subfields available in the Department; the third will be specific to the needs and interests of the student and the dissertation plans that have been formulated. All students will be expected to have competence in general anthropological theory. The Department does not require this to be a closed book examination. The format of the examination is to be determined by the Departmental Doctoral Committee and might consist of sets of timed examinations administered in the Department, take home examinations, or sets of questions selected from a list previously known to the student. Written examinations must be completed at least four weeks prior to the last day of instruction in a quarter, and taken no less than two weeks prior to the Oral Qualifying Examinations. Students must submit the original and three copies of the written examinations to the Department Counselor who will distribute

them to the student's committee. Each committee member must read and evaluate the entire examination, not just the questions in his or her own field, and this must be done within one week after receiving them. After consultation, the committee members for the written examination must make a unanimous decision as to whether the examination is to be graded *pass* or *not pass*. This decision will be reported on the departmental Written Qualifying Examination report. Upon successful completion of this examination, the student's Doctoral Committee (including outside members) administers the Oral Qualifying Examination to the student. The committee determines the conditions for reexamination should the student fail either examination.

Final Oral Examination Following Completion of the Dissertation. This examination is required of all candidates and is administered by the Doctoral Committee. It focuses on the student's dissertation. The examination shall be open to faculty and students. The Final Oral Examination may be waived by petition to the Graduate Division with the approval of the student's Doctoral Committee.

Time to Degree. For a full-time student admitted without deficiencies, normal progress after receiving an M.A. degree is considered to be:

Requirements	Expected by end of
Select third member of Departmental Doctoral Committee	1st. quarter
Completion of Foreign Language requirement	3rd. quarter
Nomination of 5-person Doctoral Committee	3rd. quarter
Written and Oral Qualifying Examinations (usually taken in same quarter)	4th. quarter
Advancement of Candidacy	5th. quarter
Final Oral Examinations (Dissertation Defense)	9th. quarter
Pre-M.A. to Ph.D. degree	18th. quarter
Post-M.A. to Ph.D. degree	max. of 15 quarters

Other Relevant Information. Graduate students are encouraged to participate in the Graduate Student Association which plays an important part in curriculum planning, speakers programs and departmental administration. The graduate students of Anthropology also publish *Anthropology UCLA*, a journal and *Crossroads*, a graduate student newsletter. The Department has a typing room and reading room with a large selection of anthropological journals. Participation in the Institute of Archaeology and the Museum of Cultural History is also encouraged.

*Graduate Courses

Admission to all graduate courses is subject to the instructor's approval and completion of appropriate course requirements (when so indicated). Graduate courses are normally nonrepetitive in content and may be repeated for credit with the consent of instructor and approval of the Graduate Counselor.

210-219. Archaeology

210. Analytical Methods in Archaeological Studies. (Formerly numbered 210A.) Prerequisites: one quarter of statistics and consent of instructor. This course will cover data analysis procedures in archaeology. The emphasis will be on the conceptual framework for the analysis of archaeological data. It will begin at the level of the attribute and end at the level of the region. Mr. Read

211. Regional Analysis in Archaeology. (Formerly numbered 210B.) Prerequisite: consent of instructor. Anthropology 210P (formerly numbered 210A) is not a prerequisite for this course. This course surveys the analytical methods used in archaeology to study prehistoric settlement systems. Specific issues addressed include settlement distribution with respect to natural resources, settlement hierarchy and patterns of exchange. Mr. Earle

212P. Selected Topics in Hunter-Gatherer Archaeology. (Formerly numbered 214E.) Prerequisite: consent of instructor. Regional studies in the development of early human culture. This course may be repeated for credit. Mr. Meighan

212Q. Problems in Southwestern Archaeology. (Formerly numbered 205.) 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 will vary with each course offering. This course may be repeated for credit. Mr. Hill

213. Selected Topics in Problems in Old World Archaeology. (Formerly numbered 214F.) Prerequisite: consent of instructor. This course may be repeated for credit. Mr. Sackett

214. Selected Topics in Prehistoric Civilizations of the New World. (Formerly numbered 214G.) Prerequisite: consent of instructor. The Mesoamerican and Andean civilizations will normally constitute the major focus of the seminar. This course may be repeated for credit. Mr. Donnan, Mr. Nicholson

215. Field Training in Archaeology. (1 to 2 courses) (Formerly numbered 214J.) Prerequisite: previous 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. This course may be repeated for credit. Mr. Meighan

M216. Dating Techniques in Environmental Sciences and Archaeology. (Formerly numbered M214I.) (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. This course may be repeated for credit. Mr. Berger

217. Explanation of Societal Change. (Formerly numbered 234.) 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 will vary with each course offering. This course may be repeated for credit. Mr. Hill

218. Historical Reconstruction and Archaeology. (Formerly numbered 214H.) Prerequisite: consent of instructor. Interpretation of historical development through archaeological research. Application of ethnohistory to archaeological problems. This course may be repeated for credit. Mr. Meighan, Mr. Nicholson

M219A-M219B. Graduate Core Seminar in Archaeology. (Same as Archaeology 201A-201B.) Seminar discussions based on a carefully selected list of 30-40 major archaeological works. These core courses provide the student with a foundation in the breadth of knowledge required by a professional archaeologist. The courses comprise archaeological historiography, a survey of world archaeology and archaeological techniques. Emphasis will be placed on an appreciation of the multidisciplinary background of modern archaeology and of the relevant interpretative strategies. This course is required of all Archaeology graduate students in Anthropology.

220-226. 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 upon the nature of hypotheses and their testing in on-going student and faculty research. This course may be repeated for credit.

221A-221B. The Fossil Evidence for Human Evolution. Prerequisite: consent of instructor. Course 221A is prerequisite to 221B. No credit will be allowed for course 221A without course 221B. An examination and analysis of the fossil evidence for man's evolution. Ms. Kennedy

***222P. Population Genetics of Man.** (Formerly numbered 222A.) 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.** (Formerly numbered M222B.) (Same as Biomathematics M246.) Lecture, three hours. Prerequisites: Graduate Standing, two quarters of statistics, Mathematics 3A, Anthropology 222P (formerly numbered 222A.) An introduction to probability models and statistical methods in genetics. Maximum likelihood methods for estimating genetic parameters will be introduced and discussed in detail. (This course is a prerequisite for Anthropology 222R, (formerly numbered 222C). Mr. Read

***M222R. Modeling in Genetic Analysis.** (Formerly numbered M222C.) Lecture, three hours. Prerequisites: Graduate Standing, Anthropology M222Q (formerly numbered M222B) or consent of instructor. Basic concepts of human genetics with emphasis on methods of computer-oriented genetic analysis. Topics include segregation analysis, genetic linkage, polygenic (quantitative) models and population structure. Ms. Spence

222S. Population Genetics. (Formerly numbered 229E.) Prerequisite: consent of instructor. A consideration of some of the special methods of the genetics of human populations and their current application in research. This course may be repeated for credit. Mr. Williams

223. The Roots of Human Behavior. (Formerly numbered 291.) Prerequisite: consent of instructor. An examination of the behavior of living non-human primates and of the evolution and biological basis of human behavior. This course may be repeated for credit.

***224. Selected Topics in Field Training in Biological Anthropology.** Prerequisite: consent of instructor. Examination of current hypotheses in student and faculty field research. Emphasis upon new approaches to field and field-oriented laboratory investigations of primate ecology, behavior, anatomy, physiology and evolution. Specific topics to be announced. This course may be repeated for credit. Mr. Russell

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

***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. This course may be repeated for credit. Mr. Russell

226. Biological Anthropology Colloquium. (Formerly numbered 229F.) To be graded on an S/U basis only. Selected topics on the status of current research in biological anthropology. This course may be repeated for credit.

M229A-229B-229C. Seminar: Selected Topics in Human Ethology. (*Same as Psychiatry M279A-279B-279C and Education M281A-281B-281C.*) Ethologists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter will cover one level of analysis; describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins.
Mr. Blurton-Jones

230-239. Cultural Anthropology

230P. Ethnology. (Formerly numbered 269F.) Prerequisite: consent of instructor. A seminar on ethnological method and theory concentrating on ideational systems. This course may be repeated for credit. Mr. Wilbert

230Q. Cultural Anthropology. (Formerly numbered 269E.) Prerequisite: consent of instructor. Special problems in cultural anthropology. This course may be repeated for credit. Mr. Goldschmidt

231. Asian-Americans: Personality and Identity. (Formerly numbered 253.) Prerequisite: Graduate Standing. This seminar will examine the effect of class, caste and race on the Asian-American personality within the framework of anthropological theories.

232P. Cultural Modes of Thought. (Formerly numbered 246.) Prerequisite: consent of instructor. An examination of the influences of culture on learning, perception, thinking and intelligence. The course to cover the fields of cross-cultural psychology in addition to cognitive anthropology. The focus is on learning and thinking in non-Western cultures but would include problems of education in ethnic areas within the U.S. Mr. Price-Williams

232Q. Myth and Ritual. (Formerly numbered 269Q.) Prerequisite: consent of instructor. This seminar discusses nature and function of myth and ritual in non-industrialized societies. Its associated value systems and philosophies are examined as infrastructure of culture rather than as phenomena proposed by structuralist rationalism and cultural material empiricism. This course may be repeated for credit. Mr. Wilbert

M232R. South American Folklore and Mythology Studies. (Formerly numbered M252.) (*Same as Folklore and Mythology M257.*) Prerequisite: Anthropology 174P (formerly numbered 105A) 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

233P. Symbolic Anthropology. (Formerly numbered 269P.) Prerequisite: consent of instructor or Anthropology 133R (formerly numbered 144). 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 in this course. This course may be repeated for credit. Mr. Maquet

233Q. Aesthetic Anthropology. (Formerly numbered 269R.) Prerequisite: Anthropology 133R (formerly numbered 144) or consent of instructor. Selected questions concerning the visual aesthetic phenomena in their relationships with the sociocultural context will be examined in depth. This course may be repeated for credit. Mr. Maquet

234A-234B. Seminar in Psychocultural Studies. Prerequisite: consent of instructor. This two-quarter sequence is devoted to the present state of research in psychocultural studies. It will survey work in child development and socialization, personality, psychobiology, transcultural psychiatry, deviance, learning, perception, cognition, and psychocultural perspectives on change.

M234P. Transcultural Psychiatry. (Formerly numbered M244.) (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 disorder, "cultural specific" syndromes, non-Western psychiatries, and the questions of "sick" societies. This course may be repeated for credit. Mr. Kennedy, Mr. Langness

M234Q. Psychological Anthropology. (Formerly numbered M269K.) (Same as Psychiatry M272.) Lecture, three hours. Prerequisite: consent of instructor. This course will deal with various psychological issues in anthropology, both theoretical and methodological. Areas of interest will include such things as culture and theory, culture and personality and culture psychiatry. The course will deal with questions relating to symbolic and unconsciousness process as they are related to culture. Particular topics will be changed from quarter to quarter and the course may be repeated for credit. Mr. Kennedy, Mr. Langness

234R. Sociocultural Perspectives on Mental Retardation. Prerequisite: consent of instructor. This seminar will explore 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 to be introduced will include cross-cultural perspectives, the history of institutional confinement, the policies of deinstitutionalization and normalization, and current issues involving adaptation and "quality of life." Also to be discussed are topics such as communicative competence, work, crime, and deviance, sexuality and marriage. This course may be repeated for credit. Mr. Edgerton

235A-235B. The Individual Culture. (Formerly numbered 269I-269J.) Prerequisite; consent of instructor. Course 235A (formerly numbered 269I) is prerequisite to 236B (formerly numbered 269J). Credit to be given only at the completion of 235B.

236P. Selected Topics in the Cross-Cultural Study of Socialization and Child Training. (Formerly numbered 246.) Prerequisite: consent of instructor. Selected topics in the cross-cultural study of socialization and child training. Methods, ethnographic data, and theoretical orientations. Emphasis is on current research. This course may be repeated for credit. Mr. Weisner

M236Q. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Formerly numbered M260.) (Same as Education M222 and Psychiatry M235.) Lecture, three hours. Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings will be taught, emphasizing field training and practice in observing behavior. Some of the uses of observations and their implications for research in the social sciences will also be discussed. Students will be expected to integrate observational work into their current research interests. This course may be repeated for credit.
Mr. Gallimore, Mr. Levine, Mr. Turner, Mr. Weisner

239P. Selected Topics in Field Training in Ethnography (1 to 2 courses). (Formerly numbered 265.) Prerequisite: consent of instructor. Supervised collection of ethnographic information in the field. Students will spend full time in the field for most of the period.

239Q. Analysis of Field Data. (Formerly numbered 263.) Prerequisite: Anthropology 239P (formerly numbered 265) or other field training course. Supervised analysis of ethnographic materials by students who have participated in a related field training course. Students will work with their own as well as general project data in the preparation of articles for professional journals. This course may be repeated for credit.

240-248. Linguistic Anthropology

240. Seminar in Language and Culture. (Formerly numbered 200.) Prerequisite: consent of instructor. The development of anthropological linguistics, modern linguistic theory and its application to the study of non-linguistic aspects of culture, including relationship of language to world view; comparative historical linguistics to prehistory, lexico-statistics, semantic analysis, linguistic acculturation and socio- and ethno-linguistics. Mr. Kroskrity

M241. Topics in Linguistic Anthropology. (Formerly numbered M201C.) (Same as Linguistics M246C.) Prerequisite: consent of instructor. Problems in relations of language, culture and society. This course may be repeated for credit.

242. The Ethnography of Communication. Prerequisite: Graduate Standing or consent of instructor. This course represents a seminar devoted to examining representative scholarship from the fields of Sociolinguistics and the Ethnography of Communication. Particular attention is devoted 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 non-casual speech genres, languages and ethnicity, and non-verbal communication behavior.
Mr. Kroskrity

243P. American Indian Ethnolinguistics and Sociolinguistics. Prerequisites: prior coursework in either Anthropology, Linguistics, or American Indian Studies and consent of instructor. This course examines 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 micro-sociolinguistic topics (such as language contact, language change, and language in American Indian education). Graduate students will 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. This seminar aims to provide basic information on Black American English, an important minority dialect in the United States. The social implications of minority dialects will be examined from their perspectives of their genesis, maintenance and social functions. Students will be acquainted with general problems and issues in the fields of sociolinguistics. These issues will be examined through a case study approach. Students will be required to conduct research in consultation with the instructor, as well as participate in group discussion. May be concurrently scheduled with Anthropology C145. Ms. Mitchell-Kernan

244. Topics in Language Socialization. (Formerly numbered 202.) 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. This course may be repeated for credit.
Ms. Mitchell-Kernan

245. Linguistic and Intra-Cultural Variation. (Formerly numbered 203.) Prerequisite: consent of instructor. The course addresses 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- and inter- individual variation, and to evaluate the utility and potential applicability of recent linguistic models to anthropological linguistic and anthropological theory. Mr. Kroskrity

246. Research Design and Field Training in Linguistic Anthropology. (Formerly numbered 204A.) Prerequisite: consent of instructor. Supervised collection of linguistic information in the field. Students will spend full time in the field for most of the period. Graded S/U or letter grade. This course may be repeated for credit.

247. Analysis of Linguistic Field Data. Prerequisite: course 246 (formerly number 204A), 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 will work with their own as well as general project data in the preparation of articles for professional journals. Graded S/U or letter grade. This course may be repeated for credit.

M247A. Ethnographic Film. (Same as Theater Arts M209C.) Prerequisites: Graduate Standing and consent of instructor. The ethnographic film as a form of realist cinema and its relations to cultural anthropology. Offered in the Fall Quarter.
Mr. Hawkins, Mr. Moerman

248. Practicum in a Field Language (1 to 2 courses). (Formerly numbered 266.) Prerequisite: consent of instructor. Intensive training in an indigenous language as preparation for work in the field.

250-258. Social Anthropology

250. Social Anthropology. (Formerly numbered 231.) Prerequisite: consent of instructor. Intensive examination of current theoretical views and literature.
Mr. Mendonsa

251P. Cultural Ecology. (Formerly numbered 269H.) Prerequisite: consent of instructor. This course may be repeated for credit. Mr. Johnson

251Q. Cultural Ecology of Lowland South America. (Formerly numbered 251.) 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 are explored and special attention is given to effects of modern changes on the people and their environment. Mr. Johnson

252. Special Topics in Social Process. (Formerly numbered 237.) 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. Processual approaches compared with normative concepts and ideal models. This course may be repeated for credit.

253. Economic Anthropology. (Formerly numbered 269L.) Prerequisite: consent of instructor. This course may be repeated for credit.

254. Kinship. (Formerly numbered 269M.) Prerequisite: consent of instructor. This course may be repeated for credit. Ms. Levine, Mr. Mendonsa

255. Comparative Political Institutions. (Formerly numbered 269T.) Prerequisite: consent of instructor. This course may be repeated for credit.
Mr. Mendonsa

257. Social Interaction. (Formerly numbered 270F.) Prerequisite: consent of instructor. The course will focus 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. This course may be repeated for credit. Mr. Moerman

258. Comparative Studies of Intentional Communities. (Formerly numbered 269S.) Prerequisite: Anthropology 157 or consent of instructor. Questions concerning the ideational, societal, and individual significance of intentional communities will be selected and discussed in depth with reference to particular collectivities. This course may be repeated for credit.
Mr. Maquet

260-270. Anthropology for Social Action

260. Urban Anthropology. (Formerly numbered 236.) Prerequisite: Anthropology 167 (formerly numbered 160) or consent of instructor. An intensive anthropological examination of the urban setting as a human environment.

261. Comparative Minority Relations. (Formerly numbered 269O.) 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 will be 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. This course may be repeated for credit. Mr. Velez-I

262. The Cultural Context of Health Care. (Formerly numbered 241.) Prerequisite: consent of instructor. Concepts and treatment of illness and disease in cross-cultural perspectives, with an emphasis on research problems and methods. The course introduces the anthropological approach to health-related research, then explores the intersections of anthropology and problem areas in public health and psychiatry (such as epidemiology, fertility regulation, socialization, and developmental disabilities).
Mr. Johnson

M263. Medical Anthropology. (Formerly numbered M269N.) (Same as Nursing M217.) Prerequisite: course M168 (formerly M158) or consent of instructor. Any of the topics covered in upper division course M168 will be selected each quarter, for intensive literature review and independent projects. The course may be repeated for credit. Ms. Brink

264. Ethnography of the Mexican/Chicano People in North America. (Formerly numbered 269Z.) Prerequisites: Graduate Standing or consent of instructor. It is recommended that students have taken the Anthropology 172T (formerly numbered 106G) but it is not imperative. A graduate research course on topics in the ethnography of the Mexican/Chicano people in North America. Topics may include the following: social organization, economic and political systems, belief and value system, linguistic and expressive adaptations, and individuals and their cultural contexts. Topics will vary according to interest and the instructor will announce the topic(s) prior to the beginning of the quarter. This course may be repeated for credit.
Mr. Velez-I

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

M267B-M267C. Ethnographic Film Direction. (1 to 2 courses) (Formerly numbered M294B-M294C.) (Same as Theater Arts M265A-M265B.) Prerequisites: course 209C, Graduate Standing and consent of instructor. Advanced study of problems in the production of ethnographic films. M267B is offered in the Winter Quarter and M267C is offered in the Spring Quarter. Mr. Hawkins, Mr. Moerman

M270E. Legal Anthropology. (Same as Law M352.) Prerequisites: Anthropology M223 (Law M152) Anthropological Approaches to Law or consent of instructor. An intensive examination of a particular aspect of law. Ms. Moore

271-274. Regional Cultures

271. African Cultures. (Formerly numbered 254.) Prerequisite: consent of instructor. Survey of literature and problems of African culture. Mr. Mendonsa

M272. Indians of South America. (Formerly numbered 250A.) (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. This course may be repeated for credit. Mr. Wilbert

273. Cultures of the Middle East. (Formerly numbered 255.) Prerequisite: course 176 (formerly numbered 110) or consent of instructor. Survey literature and problems of the various cultures of the Middle East.

274. Cultures of the Pacific Islands. (Formerly numbered 269Y.) Prerequisite: consent of instructor. Topics in the contemporary sociocultural anthropology, and classic ethnography for Melanesia, Polynesia and Micronesa. This course may be repeated for credit. Mr. Newman

280-283. History and Theory

280. Anthropology Theory. (Formerly numbered 230A-230B.) Prerequisite: Anthropology Graduate Standing or consent of instructor. This course examines 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 will be explored. Emphasis will be placed on up-to-date examples of different theoretical perspectives. Major perspectives to be considered include the following: 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. This seminar will deal in-depth with particular problems in the history of anthropology as dictated by the interests of students and faculty. This course may be repeated for credit.

282. Research Design in Cultural Anthropology. (Formerly numbered 261.) 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 are discussed. Lectures and readings review 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. (Formerly numbered 292.) Prerequisite: consent of instructor. The course will be organized around 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., will be presented and discussed. Mr. Read

291. The Roots of Human Behavior. (Formerly numbered 299.) Prerequisite: consent of instructor. An examination of the behavior of living non-human primates and of the evolution and biological basis of human behavior.

501-599. Individual Studies/ Research Courses

501. Cooperative Program. (½ to 2 courses) Prerequisite: approval of UCLA Adviser and Graduate Dean Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Individual Studies for Graduate Students. (½ to 2 courses) Prerequisite: consent of instructor. Directed individual studies. May be taken for a letter grade.

597. Preparation for the Doctoral Qualifying Examination. (½ to 3 courses)

596. Research for Preparation of the Master's Thesis. (½ to 2 courses) Prerequisite: consent of instructor (faculty adviser). Preparation of research data and writing of master's thesis. To be graded S/U.

599. Research for Dissertation. (½ to 3 courses) Prerequisite: consent of instructor. Ph.D. dissertation research or writing. Student will have completed qualifying examination and ordinarily will take no other coursework.

Applied Linguistics

(Interdepartmental)

(Office, 3306 Rolfe Hall)

The Ph.D. Degree

Admissions Requirements. The basic requirement for admission is the completion of the UCLA master's degree in Teaching English as a Second Language 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) would probably have quite a number of courses to make up. Unless much of their previous work can be shown to be particularly applicable to one of the four areas of specialization, it will be advisable for them 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 the students' academic background; (2) As definite and complete a statement as possible 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. Applicants whose native language is English should take the Aptitude Test of the Graduate Record Examinations (GRE). Applications for admission for the Fall Quarter in September should reach the Graduate Admissions Office by the preceding December 30 and the supporting materials should reach the Program Office no later than February 15.

Criteria that will be taken into consideration in admitting students include their graduate and undergraduate grade point averages, their relevant professional experience, their command of foreign language, the quality of their M.A. thesis, and any language-related publications they may have written.

Admission is almost always for the Fall Quarter beginning in September. To insure their admission, Ph.D. aspirants must enroll in the quarter for which they were admitted. If they cannot do so, it will be necessary for them to reapply for a subsequent quarter, and there is no assurance that they will be given preference at that time over other applicants who may be judged more qualified.

Advising. Program Office, Ph.D. in Applied Linguistics 3306 Rolfe Hall, UCLA.

All students entering the doctoral program must discuss their proposed course of study and research at an early date with the Ph.D. Program Adviser and with other interested faculty members in ESL and in Linguistics. Study Lists for each quarter must be signed by the Program Adviser. At the beginning of each quarter the Adviser reviews each student's record and advises him or her of the progress in the program and the remaining requirements that must be met.

Major Fields and Specializations. Four areas of specialization are available: language analysis, language education, language acquisition, and language use. The specialization in *language analysis* is designed to prepare researchers to present to students significant data on language the researchers know well; to construct school grammars, dialect atlases, descriptive phonologies, contrastive analyses, etc. and to carry out similar empirically-oriented pursuits. The specialization in *language education* concerns various forms of language instruction: English as a second or foreign language, the teaching of other languages, and language in bilingual/bicultural or bidialectal education. It is designed to prepare graduates competent to serve in the areas of curriculum development, language consultation, language testing, materials preparation, and teacher training. The specification in *language acquisition* involves psycholinguistics. It refers to both child-language acquisition and second-language acquisition. It is intended to equip students to conduct research on language learning in clinics, laboratories, classrooms, and also in informal natural settings. The specialization in *language use* relates generally to sociolinguistics, and specifically to language planning, language policy in the United States and abroad, as well as to the analysis of discourse. It is aimed at the development of competence in such areas as educational consultation, program planning and evaluation, language surveys, and literacy campaigns.

Foreign Language Requirement. Before advancement to candidacy, students must demonstrate a knowledge of two foreign languages at the effective level. For one language, an effective *reading knowledge* is required. For the other language, effective *oral proficiency* may, at the option of the student, be demonstrated instead of a reading knowledge. The language chosen should be especially relevant to the student's intended dissertation topic or professional plans. A student whose native language is a language other than English is exempted from this foreign language requirement. Language-proficiency examinations for the Ph.D. in Applied Linguistics are administered by a special ad hoc committee. Information regarding the nature and administration of the examinations is available from the Program Office.

Required Courses. In addition to fulfilling the general University requirements for the doctorate, 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: Linguistics 120A (Linguistic Analysis: Phonology); 120B (Linguistic Analysis: Grammar); 165A (Linguistic Theory: Phonology); and 165B (Linguistic Theory: Grammar); English 370K (The Teaching of English as a Second Language); 250K (Contrastive Analysis and Error Analysis in the ESL Context); and 380K (Supervised Teaching: English as a Second Language or Dialect). English 370K, which is organized as a general orientation to the ESL Section, must be taken at UCLA. If a student can establish that he/she has taken courses equivalent to any of the remaining courses at another institution, he/she will not be required to take them at UCLA. If he/she has at least one year of experience in teaching a second language, he/she can be exempted from English 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 the M.A. courses listed above as basic preparation, Linguistics 275, English 400K, or Applied Linguistics 597 or 599. No more than 8 of the 32 units may be in 596 individual study 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 individual study courses taken in departments other than Linguistics or English). An additional two courses are required in the specialization in which the candidate chooses to do his/her dissertation research. 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 counted toward fulfillment of the 8-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 course, Applied Linguistics 501.

Within the limits imposed by the Graduate Division, undergraduate courses taken as prerequisites to needed graduate courses, unrequired undergraduate courses, reading courses in a foreign language, graduate courses taken in addition to the required 32 units, Applied Linguistics 501 and 597-599,

English 400K, and Linguistics 275 may be taken on a Satisfactory/Unsatisfactory basis. All other courses must be taken for letter grades.

Written and Oral Qualifying Examinations. In lieu of a *Written Qualifying Examination,* the student will submit two original research papers of publishable quality in different areas of specialization. These may be revised or extended seminar papers but must be prepared after admission to the Ph.D. program. (If the student at the time of his/her admission has already published papers of the required quality, he/she may petition to have *one* of these accepted in partial fulfillment of this requirement). The topics of these papers are to be chosen by the student, in consultation with appropriate faculty members and with the approval of the Ph.D. Program Adviser (Chair of the Interdepartmental Committee that administers the program). Each of the finished papers is evaluated by two faculty members chosen by the student in consultation with the Program Adviser. Any paper or papers judged unsatisfactory by either of the two readers must be revised to that reader's satisfaction. For each paper, one of the two readers may be from outside Linguistics and ESL, and one of the two must be willing to serve on the student's doctoral committee.

Doctoral Committee. The doctoral committee for the student is nominated by the Ph.D. Program Adviser after consultation with the student, and is then appointed by the Dean of the Graduate Division. The doctoral committee will include a minimum of five members, two of whom hold no appointment in Linguistics or ESL. Upon appointment, the chair of the doctoral committee becomes the student's chief source of guidance. The doctoral committee administers to the student an *Oral Candidacy Examination,* the focus of which will be a prospectus of his/her dissertation which the student must submit to the committee prior to the examination. The committee also has the responsibility for determining the adequacy of the student's preparation for writing the dissertation. If prospectus and preparation are judged adequate, the choice of the dissertation topic is thereby approved and the student becomes eligible for advancement to doctoral candidacy. In case of failure, the doctoral committee determines whether or not the candidate may be reexamined and if further courses must be taken before the reexamination.

Dissertation. 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. A minimum of three members of the doctoral committee, suggested by the committee chair and approved by all committee members at the time of the Oral Candidacy Examination, must read each dissertation and certify that it satisfies the research requirements of the Ph.D. These three readers must include at least two faculty members from ESL or Linguistics and at least one member from another department.

Final Oral Examination Following Completion of the Dissertation. As the dissertation nears completion, all candidates must make a *public report* on the results of their research. This may be done, at the candidate's choice, at a meeting of the colloquium of either the Department of Linguistics or the ESL Section. Each candidate must, therefore, enroll in either English 400K or Linguistics 275 during the appropriate quarter. All members of the doctoral committee who will read the dissertation will attend the colloquium session at which the public report is made and will then determine whether or not the candidate will be required to pass a *Final Oral Examination.* Only by a unanimous vote of the readers can the Final Oral Examination be waived. The Graduate Division requires that, if a Final Oral Examination is held, all members of the doctoral committee must attend to vote. Even if no Final Oral Examination is held, the readers of the dissertation must still determine in the usual way whether or not the dissertation is finally approved after it has been completed.

Time to Degree. From first enrollment in the doctoral program to advancement to candidacy: two to three years. From first enrollment to completion of degree: three to five years. The outside limit for the Ph.D. from start to finish, including leaves or interruptions of any kind, is seven calendar years from first enrollment. The approved normative time-to-degree for the Ph.D. is 15 quarters (five years).

Candidate in Philosophy Degree

Upon application, this degree is conferred upon any student who has been advanced to candidacy.

Disqualification. If a student has not been awarded the degree by the end of seven years, it will be the responsibility of the Program Adviser to request that the Dean of the Graduate Division disqualify that student from further participation in the program. The disqualification of a student for other reasons may be requested if a majority of his/her doctoral committee so votes.

Appeals. Disqualification for any reason may be appealed to the Interdepartmental Committee which administers the program.

Other Relevant Information. An informational brochure giving more detailed information is available from the Program Office, 3306 Rolfe Hall.

Language Analysis

English 215. The Structure of Present-Day English.
241. Studies in the Structure of the English Language.
Linguistics 201A-201B. Phonological Theory.
206A-206B. Syntactic Theory.
210A-210B. Field Methods.
220. Linguistic Areas.
225. Linguistic Structures.
251. Topics in Phonetics of Phonology.
252. Topics in Syntax and Semantics.
253. Topics in Linguistic Variation.
254. Topics in Linguistics.
Spanish 256A. Studies in 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. (All these courses are highly recommended for statistical work, but only two of them will be counted toward fulfillment of the 8-course requirement.)
211A. The Measurement of Educational Achievement and Aptitude.
211B. Measurement in Education: Underlying Theory.
262B. Seminar: Reading.
262D. Seminar: Language Arts and English.
262F. Seminar: Research Topics in Bilingual Multicultural Education.
264. Seminar: Teacher Education.
English 215. The Structure of Present-Day English.
272. Current Issues in the Teaching of English.
274. Teaching English to Minority Groups.
English as a Second Language. 210K. Role of ESL in Bilingual Education.
251K. Bilingual Comparative Studies.
261K. Language Testing for Teachers of English as a Second Language.
270K. Language Policy in Developing Countries.
272K. Current Issues in Applied Linguistics.

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 as a Second Language. 260K. Psycholinguistics and Language Teaching.
262K. Second Language Acquisition.
Linguistics 254. Topics in Linguistics.
Psychiatry 257A-257B-257C. Diagnostics and Therapeutics of Language Disabilities.
Psychology 240. Developmental Psychology
260A-260B. Proseminar in Cognitive Psychology.
263. Psycholinguistics.

Language Use

Anthropology 232P. Cultural Modes of Thought.
240. Seminar in Language and Culture.
M241. Topics in Linguistic Anthropology.
M243Q. Psychological Anthropology.
244. Topics in Language Socialization.
Education 200B. Survey Research Methods in Education.
204G. Planning Educational Language Policy Internationally.
English 242. Language and Literature.
271. Studies of African Literature in English
M273. Studies in Afro-American Literature.
274. Teaching English to Minority Groups.
275. Stylistics and the Teaching of English.
English as a Second Language. 210K. Role of ESL in Bilingual Education.
270K. Language Policy in Developing Countries.
Linguistics 251. Topics in Phonetics and Phonology.

252. Topics in Syntax and Semantics.

254. Topics in Linguistics.

Sociology 216A-216B. Survey Research Methods.

217A-217B. Ethnographic Field Work.

238A-238B. Field Work in Minority Communities.

266. Selected Problems in the Analysis of Conversation.

267. Selected Problems in Communication.

Spanish 209. Dialectology.

256B. Studies in Dialectology.

Graduate Courses

501. Cooperative Program. (½ to 2 courses) Prerequisite: approval of Ph.D. Program Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Study. (1 to 2 courses) Prerequisite: admission to doctoral program. Independent study in an area of Applied Linguistics. May be repeated for credit. Up to eight units of 596 credit applicable to course requirements for Ph.D. in Applied Linguistics.

597. Preparation for Doctoral Candidacy Examination. (1 to 2 courses) Prerequisite: completion of at least six courses of the 32-unit requirement for the Ph.D. in Applied Linguistics. May not be applied toward fulfillment of the 32-unit requirement. May be repeated for credit. Graded S/U.

599. Research for and Preparation of the Doctoral Dissertation. (1 to 4 courses) Prerequisite: advancement to candidacy for the Ph.D. degree. Required of all doctoral candidates each quarter they are registered and engaged in dissertation preparation. May be repeated for credit, but may not be applied towards fulfillment of Ph.D. course requirements. To be graded S/U.

Archaeology

(Interdepartmental)

Rainer Berger, Ph.D., *Professor of Anthropology, Geography and Geophysics; Chair, Archaeology Interdepartmental Program.*
Giorgio Buccellati, Ph.D., *Professor of Ancient Near East (Department of Near Eastern Languages and Cultures) and History.*
Christopher B. Donnan, Ph.D., *Professor of Anthropology; Director, Museum of Cultural History.*
Susan B. Downey, Ph.D., *Professor of Art History.*
Marija Gimbutas, Ph.D., *Professor of European Archaeology (Department of Slavic Languages).*
James N. Hill, Ph.D., *Professor of Anthropology.*
Leona Libby, Ph.D., *Adjunct Professor of Environmental and Archaeological Sciences.*
Clement W. Meighan, Ph.D., *Professor of Anthropology.*
Henry B. Nicholson, Ph.D., *Professor of Anthropology.*
Wendell H. Oswalt, Ph.D., *Professor of Anthropology.*
Merrick Posnansky, *Professor of History and Anthropology.*
James R. Sackett, Ph.D., *Professor of Anthropology.*
Elizabeth Carter, Ph.D., *Associate Professor of Near Eastern Archaeology (Department of Near Eastern Languages and Cultures).*
Hung-hsiang Chou, Ph.D., *Associate Professor of Oriental Languages.*
Timothy Earle, Ph.D., *Associate Professor of Anthropology.*
Cecelia F. Klein, Ph.D., *Associate Professor of Art History.*
William Klement, Jr., Ph.D., *Associate Professor of Engineering, Applied Science and Archaeological Sciences.*
Steven Lattimore, Ph.D., *Associate Professor of Classics.*
Dwight Read, Ph.D., *Associate Professor of Anthropology.*
Michael DeNiro, Ph.D., *Assistant Professor of Geochemistry and Archaeological Sciences.*
Gail Kennedy, Ph.D., *Assistant Professor of Anthropology.*
Deborah Klimburg-Salter, Ph.D., *Assistant Professor of Art History.*

•

Alexander Badawy, Ph.D., *Emeritus Professor of Art.*
Paul A. Clement, Ph.D., *Emeritus Professor of Classics and Classical Archaeology.*
Bernard D. Frischer, Ph.D., *Assistant Professor of Classics.*
Kan Lao, *Academician, Emeritus Professor of Oriental Languages.*
Katharina Otto-Dorn, Ph.D., *Emeritus Professor of History.*
Martin Powers, Ph.D., *Assistant Professor of Art History.*
Arnold Rubin, Ph.D., *Associate Professor of Art History.*
Richard C. Rudolph, Ph.D., *Emeritus Professor of Oriental Languages.*
Stanislav Segert, Ph.D., *Professor of Biblical Studies and Northwest Semitics (Department of Near Eastern Languages and Cultures).*

•

The interdisciplinary Program in Archaeology brings together interests and specialties represented by those departments offering courses in archaeology as well as others offering courses which may be relevant to archaeology.

Its primary purpose 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.) Counseling will be provided to ensure that each applicant selects the degree objective best suited to his/her interests.

Active archaeological research is underway in various parts of the world, and field training in archaeology is offered. There are opportunities for participation in a variety of laboratory and field researches on a world-wide scale.

Admission Requirements. For general requirements, see the University minimum standards. Any undergraduate major may be considered for admission to the Archaeology Program although those applicants who have had little previous archaeological education may be admitted under probationary status and required to take a series of courses to make up deficiencies. A Graduate Record Examination (Aptitude Test) Report is required. The following application materials should be submitted directly to the Chair of the Archaeology Program: an acceptable Plan of Study (including a statement of the applicant's 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 for the Fall Quarter only. The Archaeology Program's "Study Guidelines" brochure will be sent to applicants upon request to the Chair, Professor Rainer Berger, Archaeology Program, UCLA, Los Angeles 90024.

Advising. Mrs. Ilene Alexander Swartz, 288 Kinsey Hall, (213) 825-4169, serves as the Graduate Adviser of the Archaeology Program. Each student has a committee chair, determined by mutual agreement, who acts as principal adviser.

The student's progress toward his/her degree is discussed every academic quarter by the members of the Executive Committee. In addition, the student receives a written checklist of his/her progress quarterly, a copy of which is sent to his/her adviser.

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
Meso-America
Pacific
Palaeoenvironmental Studies
Western North America

Other areas of specialization are also available.

Field Work

No graduate degree will be awarded until the candidate for the degree has worked in the field and has demonstrated his/her 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 the student 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 his/her 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 Archaeology Program.

The Master of Arts Degree

The structure of the M.A. Program includes the successful completion within seven academic quarters of:

1. Field work (see above)
2. Foreign language proficiency (see below)
3. Nine 4- or 6-unit upper division and graduate courses (see below)
4. Comprehensive core examination (see below)
5. M.A. paper (see below)

Foreign Language Requirement. The ability to read at least one modern foreign language, relevant to the student's field of interest and approved by his/her adviser, is required for the M.A. There are three options:

a) A student may pass (or have recently passed) an examination administered by ETS with a score of 500 or better.

b) A student may complete the third course in an introductory, regular sequence of the selected language at UCLA with a minimum grade of A.

c) With the consent of his/her committee, a student may take a reading examination (in Spanish, French or German) administered by the Archaeology 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 student's adviser. A student who does not meet this deadline will apply to the Chair of the Program for a leave of absence of one quarter during which the requirement should be fulfilled. If the examination is still not passed, the student will be terminated from the Program and asked to apply for readmission after the language requirement has been fulfilled.

Course Requirements. A minimum of 42 units, (distributed among a minimum of nine courses), taken for a letter grade, are required to be distributed as follows:

Graduate Courses 200 and 500 series (five courses) (minimum of 26 units)

(1) Archaeology 200, Archaeology Colloquium, (six units), required of all students.

(2) Archaeology 201A, 201B, Graduate Core Seminars in Archaeology, (6 units each), required of all students.

*(2) Elective Graduate Courses, one of which may be Archaeology 596, Individual Studies for Graduate Students.

Upper Division Courses (100 series)**

*(4) Elective Upper Division Courses (excluding 199's) (a minimum of 16 units).

*Of the six combined elective courses referred to above, 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.

Comprehensive Examination Plan. Students will take a comprehensive core examination during the third quarter of residence. This written examination is based largely on a reading list of about 30 volumes which have been the focus of the seminar discussions in Archaeology 201A and 201B. The examination will be graded as "high pass," "pass," or "not pass." The examination may be repeated one time.

M.A. Paper. A master's level research paper, normally no longer than 20-35 pages, graded by the three members of the student's committee, is to be submitted by the end of the third week of the seventh quarter to the Chair of the Archaeology Program.

Time to Degree. There is a ceiling of seven quarters for the completion of the M.A. degree.

500 Series Course Limitations. Archaeology 596 (Individual Studies for Graduate Students) may be taken twice for a maximum of 12 units, but only 6 units may be counted toward the minimum graduate course requirement. A letter grade is given for the course.

Disqualification. The Executive Committee may recommend disqualification of a student under one or more of the following conditions:

a) If normal progress toward the degree is not manifest;

b) G.P.A. below 3.0;

**Total number of courses in the two groups must equal nine.

c) Failure (twice) of core examination;

d) Failure to fulfill foreign language requirement;

e) Unsatisfactory M.A. paper.

Appeal. A student who wishes to appeal the decision may request a hearing by the Executive Committee to state his/her case.

The Ph.D. Degree

Admission Requirements. Completion of a master's program is required. Applicants who are not finishing the M.A. in the Archaeology Program should refer to "Admission Requirements" described on page 63. Admission to the doctoral program for an Archaeology Program student completing an M.A. is decided by the Chair of the Program upon:

1) written recommendation by all three members of the student's M.A. committee.
2) submission by the student of a Plan of Studies, including projected coursework, choice of foreign language(s), description of qualifying examination components, and dissertation topics; and
3) quality of M.A. Core Exam results.

Doctoral students entering the Archaeology Program with an M.A. from another university will be required to pass the Comprehensive Core Examination (see Master's 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 the student's interests, is normally required. Competence may be demonstrated in the ways outlined for the master's degree, Foreign Language Requirement, omitting item b. When proficiency in two foreign languages is not mandated by a student's interest, a petition for waiving the second language may be prepared. After the petition has been unanimously endorsed by the student's committee members, it is presented to the Executive Committee for approval.

Course Requirements. Students must be enrolled in a minimum of 8 units per quarter. Archaeology 200 is required. There are no other restrictions or requirements concerning the courses a student may take.

Written and Oral Examinations.
Written Qualifying Examination: By the end of the fourth quarter of the doctoral program, after the foreign language requirement has been fulfilled, the student will take a Written Qualifying Examination in the following three areas:

a) Topical Specialization: Detailed knowledge of a particular topic or research question.
b) Analytical Theory, Method and Technique: All candidates must have knowledge of the diversity of theoretical orientations, general methods, and techniques employed by archaeologists today.
c) Regional Culture History: Candidates must have detailed knowledge of the regional culture histories of one or more areas of the world. These areas must be relevant to the student's topical specialization.

At least three of the student's committee members must contribute questions to the examination as well as read and evaluate the answers. If the Chair agrees that the evaluations comprise a "pass," the student may then proceed to make arrangements to take the oral examination. If the written examination or any portion thereof is failed, the student may make one further attempt if his/her committee deems it appropriate.

A maximum of two weeks will be permitted for taking and passing all segments of the written examination. The scope of the material to be prepared, the nature of the examinations, and the intervals between the various written segments and the oral examination will be determined by the student's adviser and other members of his/her committee.

Oral Qualifying Examination: The Ph.D. Oral Qualifying Examination must be taken by the end of the sixth quarter of the doctoral program. The candidate will be required to submit to the doctoral committee a formal dissertation proposal (of about 10 pages) including the particular research problem on which the student will be examined during the Oral Qualifying Examination.

Doctoral Committee. A Ph.D. committee must be selected before the end of the first year of doctoral work. The signatures of the members of the Ph.D. committee must be filed with the Chair of the Archaeology Program.

The Ph.D. Committee consists of:

a) Three eligible faculty members selected from those names in the first section of this entry. (One of the three must also be a member of the Executive Committee of the Archaeology Program.)

b) Two additional eligible faculty members who are not listed in the first section referred to above. They may be members of other relevant departments in the systemwide University of California.

At least three different academic departments must be represented among the five (or more) members of the doctoral committee. The Chair of the Ph.D. Committee will serve as a special adviser to the student.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination may be waived by the candidate's Doctoral Committee.

Time to Degree. The normative time for the completion of the Ph.D. degree is 21 academic quarters; however, if an entrant already holds an M.A., he/she is to complete all work for the Ph.D. degree within 14 quarters.

Disqualification. The Executive Committee may recommend disqualification of a student under one or more of the following conditions:

a) If normal progress toward the degree is not manifest;

b) G.P.A. below 3.0;

c) Failure (twice) of Written Qualifying Examination;

d) Incompetent performance on Oral Qualifying Examination, so as to be denied a second chance by doctoral committee;

e) Second failure of Oral Qualifying Examination;

f) Unsatisfactory dissertation.

Appeal. A student who wishes to appeal the decision may request a hearing by the Executive Committee to state his/her case.

Other Relevant Information.

Plan of Study: Before the end of the third quarter of the doctoral program, after selecting his/her Ph.D. Committee, each student must submit a Reassessed Plan of Study. (See Study Guidelines, obtainable from the Graduate Adviser, 288 Kinsey Hall, for details.)

Related Courses in Other Departments. The following is a list of archaeology-related courses, by topic and department. No attempt is made to list all relevant courses in other disciplines.

Graduate Courses

Prerequisite for all courses: consent of the instructor. All courses may be repeated for credit upon recommendation of adviser. Of the following graduate courses only Archaeology 200 is required.

200. Archaeology Colloquium. (6 units) (Required of all students.) Seminar, two hours. Prerequisite: Archaeology major or consent of instructor. 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 taken repeatedly for credit; however, M.A. candidates may apply this course only twice toward the fulfillment of the departmental M.A. requirements.

M201A-M201B. Graduate Core Seminar in Archaeology. (6 units each) (Required of all M.A. students.) Prerequisite: consent of instructor. Seminar discussions based on a carefully selected list of 30-40 major archaeological works. These *compulsory* core courses provide the student with a foundation in the breadth of knowledge required by a professional archaeologist. The courses comprise archaeological historiography, a survey of world archaeology and archaeological techniques. Emphasis will be placed on an appreciation of the multidisciplinary background of modern archaeology and of the relevant interpretative strategies.

210. Archaeological Materials Identification and Characterization. (6 units). 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. Mr. Klement

211. Archaeological Applications of Stable Isotopes. (6 units). Application of natural variations in stable isotope ratios in fossilized biological and nonbiological materials to a variety of archaeological problems. Topics to be covered include: basis for isotope distributions in archaeological 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 and Ms. Libby

259. Field Work in Archaeology. (2-8 units) Participation in archaeological field excavations or museum research under supervision of staff archaeologists. A minimum of one month of field time away from the campus is required.

Individual Study and Research

596. Individual Studies for Graduate Students. (½ to 3 courses) Hours to be arranged. Prerequisite: consent of instructor.

597. Preparation for Doctoral Qualifying Examinations. (½ to 3 courses) Prerequisite: completion of formal course work and passing of language examinations before enrollment. Graded S/U.

598. M.A. Paper Preparation. (½ to 3 courses) Prerequisite: consent of instructor. Graded S/U.

599. Dissertation Research and Preparation. (½ to 3 courses) Prerequisite: consent of instructor. Graded S.U.

Related Courses in Other Departments

Most archaeology courses are taught in the various departments. The following is a listing of such courses, by topic and department. They are listed here for reference; students should consult the departmental course lists for full descriptions and prerequisites. No attempt is made to list relevant courses in other disciplines.

METHODOLOGY AND HISTORY

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 (Same as Geography M178).

118A-118B. Museum Studies.

121A. Fossil Man and His Culture.

121B. 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 Models in Anthropology.

210. Analytical Methods in Archaeological Studies.

211. Regional Analysis in Archaeology.

218. Reconstruction and Archaeology.

M216. Dating Techniques in Environmental Sciences and Archaeology (same as Geography M278).

221A-221B. The Fossil Evidence for Human Evolution.

217. Explanation of Societal Change.

283. Mathematical Models in Anthropology.

Art 203. Museum Studies.

265. Field Work in Archaeology.

Engineering 149C. Properties of Art Ceramic Materials.

149E. Ceramic Materials in History and Archaeology.

Near Eastern Languages and Cultures: Ancient Near East 261. Practical Field Archaeology.

NEW WORLD

Anthropology 107P. North American Indian Cultures.

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.

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 117A. Advanced Studies of Pre-Columbian Art: Mexico.

117B. Advanced Studies in Pre-Columbian Art: Central America.

117C. 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.

219. Topics in Native North American Art.

220. The Arts of Africa, Oceania and Pre-Columbian America.

OLD WORLD — EUROPE

Anthropology 112. Old Stone Age Archaeology.

213. Selected Topics in Problems in Old World Archaeology.

Art 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: Aegean Bronze Age.

151B. Classical Archaeology: Graeco-Roman Architecture

151C. Classical Archaeology: Graeco-Roman Sculpture.

151D. Classical Archaeology: Graeco-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: From the Neolithic to the Bronze Age.

132. European Archaeology: The Bronze Age.

250A-250B. European Archaeology.

OLD WORLD — NEAR EAST

Anthropology 110. World Archaeology.

Art 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-200T. Advanced Historiography.

201A-201T. Topics in History.

Near Eastern Languages and Cultures: Ancient Near East 160A-160B. Introduction to Near Eastern Archaeology.

161A-161B-161C. Archaeology of Mesopotamia.

162. Archaeology of Palestine.

163A-163B. Archaeology of Iran.

164A-164B-164C. Archaeology of 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.

OLD WORLD — ISLAM

Art 104B-104C-104D. Architecture and the Minor Arts of Islam in the Middle Ages.

213. Problems in Islamic Art.

OLD WORLD — AFRICA

Art 118C. The Arts of Sub-Saharan Africa.

119A. Advanced Studies in African Art: West Africa.

119B. Advanced Studies in African Art: Central Africa.

220. The Arts of Africa, Oceania, and Pre-Columbian America.

History

175A. Prehistoric Africa — Technological and Cultural Traditions.

197. Undergraduate Seminar.

201A-201T. Topics in History.

276. African Archaeology-Field Techniques.

277. African Archaeology-Data Analysis.

OLD WORLD — INDIA AND THE FAR EAST

Art 114A. The Early Art of India.

114B. Chinese Art.

114C. Japanese Art.

115A. Advanced Indian Art.

115B. Advanced Chinese Art.

115C. Advanced Japanese Art.

259. Topics in Asian Art.

260. Asian Art.

Oriental Languages 170A-170B. Archaeology in Early and Modern China.

270. Seminar: Selected Topics in Chinese Archaeology.

275. Seminar: Selected Topics in Chinese Cultural History.

OTHER RELATED PROGRAMS

Related courses (not listed individually) include regional geography, ancient and regional history, ethnography, folklore, and history of technology and the earth sciences. Also recommended are the appropriate modern and ancient languages for the student's area of study. Students are encouraged to examine the course listings of any and all departments whose offerings may contribute to a truly interdisciplinary course of study.

Qualified undergraduates may enroll in the following courses, provided they receive permission from the instructor.

Architecture and Urban Planning

(Office, 1317 Architecture Building)

Marvin Adelson, Ph.D., *Professor of Architecture/Urban Design.*
Samuel Aroni, Ph.D., *Professor of Architecture/Urban Design.*
Leland S. Burns, Ph.D., *Professor of Planning.*
John Friedmann, Ph.D., *Professor of Planning.*
Baruch Givoni, Ph.D., *Professor of Architecture/Urban Design.*
Peter Kamnitzer, M.Pl., M.Arch., *Professor of Planning.*
Peter Marris, B.A., *Professor of Planning.*
Murray A. Milne, M.Arch., *Professor of Architecture/Urban Design.*
William J. Mitchell, M.E.D., *Professor of Architecture/Urban Design (Program Head, Architecture/Urban Design).*
Charles Moore, Ph.D., *Professor of Architecture/Urban Design.*
Barton Myers, M.Arch., *Professor of Architecture/Urban Design.*
Harvey S. Perloff, Ph.D., *Professor of Planning (Dean).*
Helmut Schulitz, M.Arch., *Professor of Architecture/Urban Design.*
Edward W. Soja, Ph.D., *Professor of Planning.*
Thomas R. Vreeland, Jr., M.Arch., *Professor of Architecture/Urban Design.*
Martin Wachs, Ph.D., *Professor of Planning (Program Head, Urban Planning).*
Leo Estrada, Ph.D., *Associate Professor of Planning.*
J. Eugene Grigsby, III, Ph.D., *Associate Professor of Planning.*
Dolores Hayden, M.Arch., *Associate Professor of Planning.*
F. Eugene Kupper, M.Arch., *Associate Professor of Architecture/Urban Design.*
Jurg Lang, Dipl. Arch., ETH, *Associate Professor of Architecture/Urban Design.*
George Rand, Ph.D., *Associate Professor of Architecture/Urban Design (Associate Dean).*
Richard Schoen, M.Arch., *Associate Professor of Architecture/Urban Design.*
Donald Shoup, Ph.D., *Associate Professor of Planning.*
Brit Andresen, B.Arch., *Assistant Professor of Architecture/Urban Deisgn.*
Margaret Fitzsimmons, Ph.D., *Assistant Professor of Planning.*
Robin Liggett, Ph.D., *Assistant Professor of Architecture/Urban Design and Planning.*
George Stiny, Ph.D., *Assistant Professor of Architecture/Urban Design.*
Michael Storper, Ph.D., *Assistant Professor of Planning.*
Berge Aran, Ph.D., *Lecturer in Architecture/Urban Design.*
John C. Bollens, Ph.D., *Professor of Political Science.*
William A.V. Clark, Ph.D., *Professor of Geography.*
Edgardo Contini, Dottore in Ingegneria, *Adjunct Professor of Architecture/Urban Design and Planning.*
Donald G. Hagman, LL.B., L.M., *Professor of Law.*
Thomas S. Hines, Ph.D., *Associate Professor of History.*
Allan Heskin, Ph.D., LL.B., *Acting Associate Professor of Planning.*
Craig Hodgetts, M.Arch., *Lecturer in Architecture/Urban Design.*
Franklin Israel, M.Arch., *Lecturer in Architecture/Urban Design.*
Kuppuswamy Iyengar, M.Arch., *Lecturer in Architecture/Urban Design.*
Charles Jencks, Ph.D., *Lecturer in Architecture/Urban Design.*
Christopher B. Johnson, H.S. Dipl., B.Arch.St., B.Arch., *Adjunct Assistant Professor of Architecture/Urban Design.*
Robert Mangurian, B.Arch., *Lecturer in Architecture/Urban Design.*
Henry W. McGee, Jr., J.D., LL.M., *Professor of Law.*
Paul M. Merifield, Ph.D., *Lecturer in Geology.*
Frank G. Mittelbach, M.A., *Professor of Management.*
Rebecca Morales, M.A., *Adjunct Lecturer in Planning.*
Anthony R. Orme, Ph.D., *Professor of Geography.*
Barton Phelps, M.Arch., *Adjunct Assistant Professor of Architecture/Urban Design.*
Karen Hill Scott, Ed.D., *Adjunct Associate Professor of Planning.*
Robert Yudell, M.Arch., *Lecturer in Architecture/Urban Design.*

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 and Urban Planning, 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. In order to relate closely to public affairs and practitioners in the field, the School has established the Urban Innovations Group. The Urban Innovations Group (UIG) undertakes "real-world" projects to provide graduate students with opportunities to gain practical experience. It also affords faculty opportunities for professional service. Reflecting the nature of the problems and the opportunities associated with the creation and maintenance of environments of the future, the projects are ongoing and programmatic. They range from pure research, applied research, development and prototype testing to full scale implementation. UIG provides a bridge between pure academic pursuits and professional practice.

Architecture/Urban Design Program

The program in Architecture/Urban Design is organized around areas of study which represent major current directions within the fields of architecture and urban design.

Admissions Requirements

Master of Architecture I.

The M.Arch. I program is open to students holding a baccalaureate 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 many students have had experience in this field prior to admission.

Master of Architecture II.

The M.Arch. II program emphasizes advanced studies in architecture and requires that applicants have completed a 5-year professional degree in architecture, and hold a B.Arch. degree.

Master of Arts in Architecture/ Urban Planning.

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 baccalaureate degree, or its equivalent, comparable in standards and content to a bachelor's degree from the University of California. Applicants 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.

Certificate of Specialization in Architecture/Urban Design

This one-year post-professional Certificate program is designed to enable the qualified and experienced professional to pursue in depth a particular area of specialization. Applicants are required to hold a B.Arch. or M.Arch. degree from an accredited school.

Applicants to all programs are required to submit three letters of recommendation, academic transcripts, a statement of purpose and a "creative" portfolio. In accordance with the policy followed by the University's Office of Graduate Admissions, the Department generally requires that applicants have maintained a grade point average of at least 3.0 in their upper division and graduate work. No admissions tests are required. In addition to the Application to Graduate Status, applicants should submit the "Departmental Supplement" that is contained within the program description. These brochures may be obtained from: Admissions Office, Architecture/Urban Design, Graduate School of Architecture and Urban Planning, UCLA, 405 Hilgard Avenue, Los Angeles, CA. 90024.

Individuals who have further questions should contact the departmental Graduate Adviser at (213) 825-0525 or 825-7857.

Advising

Graduate Adviser: Deborah Hatheway, Graduate School of Architecture and Urban Planning, Room B-302, Phone: (213) 825-0525.

M.Arch. I students select a faculty adviser at the beginning of their second year in the 3-year program. This faculty member discusses the curriculum, approves selection of courses, authorizes program cards each quarter and is available for special counselling as needed. Students in the Advanced Graduate Studies program (M.Arch. II and M.A. students) are assigned a temporary adviser when they enter the School, and select a permanent faculty adviser as soon as they are ready to do so. Students wishing to change advisers should obtain the consent of the new faculty adviser and discuss this change with the Graduate Adviser. The faculty advisers and the Graduate Adviser work together in explaining curricular requirements and in dealing with any personal or academic difficulties that may occur.

At the end of the first year in the M.Arch.I program, each student's work is reviewed by the faculty to determine whether it merits their entrance into second year courses. Thereafter, the student's progress is continuously monitored, and any problems are discussed if and when they arise.

There is currently no formal review process established for students in the Advanced Graduate Studies program. Individual faculty advisers make final determinations regarding which courses a student is permitted to take, and also approve each student's decision to begin thesis work.

All students meet with their faculty adviser (with the exception of first year M.Arch. I students who do not have a faculty adviser) and with the Graduate Adviser at least once a quarter. Records are not usually kept in regard to these meetings, unless the end product of a meeting is a written petition or document.

Major Fields or Subdisciplines

No indepth specialization is required within the context of the M.Arch. I program. However, students are required to concentrate several of their 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.

M.Arch. II students are required to choose both a primary and secondary field of specialization, while M.A. and Certificate students are required to focus their work on a specific academic area or professional issue.

Specializations are currently available in the following areas:

Design Methods

Urban Design

Energy Conserving Design

Housing

Systems Building

Computer Aided Design

Social Building

In addition, students enrolled in the M.A. program have the option of the "Open M.A." wherein they structure their own area of interest from the courses offered by the School.

Course/Degree Requirements

M.Arch. I Program

Required Courses: M.Arch. I students must complete a minimum of 27 courses in order to graduate, of which at least 24 must be taken at the graduate level. The total number of units required is 108. The required courses are listed below, and these must be taken in the sequence indicated.

Petition to Waive Required Courses:
Students who believe that they can demonstrate that they already have adequate background in topics covered by specific required courses 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.

A petition to waive an individual required course should be addressed to the faculty member responsible for that course, and may be granted at the faculty member's discretion, possibly by means of a special examination. The petition should present evidence of adequate background in the specific topic of the course.

Advanced Standing:
Students with undergraduate degrees in architecture, or undergraduate degrees with majors in architecture, may at the end of their first quarter, petition the M.Arch.I Curriculum Committee for Advanced Standing. Students granted Advanced Standing are permitted to waive specified required courses, and are permitted to enter second year courses at the beginning of their second quarter. A petition for Advanced Standing should include a transcript documenting relevant previous 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 will be awarded on an individual basis, according to the evidence presented, and requires the concurrence both of the M.Arch.I Curriculum Committee and the faculty members in charge of each specific course to be waived. Advanced Standing does not reduce the number of courses (27) required for the M.Arch.I degree, nor does it reduce the nine-quarter residence requirement.

First Year		
Fall	411	Introductory Design Studio
	421	Architectural Drawing
	191	Modern Architecture
Winter	412	Building Design Studio
	437	Building Construction
	431	Structures I
Spring	413	Building Design with Landscape Studio
	442	Building Climatology
	432	Structures II
Second Year		
Fall	414	Major Building Design Studio I
	433	Structures III
	291	Architectural Programming
	...	Elective
Winter	415	Major Building Design Studio II
	441	Environmental Control Systems
	...	Elective
Spring	401	Elective Studios and Projects
	...	Elective
	...	Elective
Third Year		
Fall	416	Comprehensive Design Studio
	...	Elective
	...	Elective
Winter		Elective/Studio
	461	Professional Organization and Practice
	...	Elective
Spring		
	598A	Thesis Preparation/Comprehensive Project

Elective Courses: Elective course offerings are designed to allow students to explore in depth specific subject areas and to gain exposure to a variety of topics. The student is required to take a minimum of seven elective courses. At least four of these must be taken within the Graduate School of Architecture and Urban Planning. During the second year at least two electives must be in preparation for undertaking a specific studio or project in the Spring of the second year.

M.Arch. II Program

1. M.Arch II students 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 project is required. Three faculty members (at least two from the School) will serve as members of the Thesis Project Committee. When all three have signed the thesis proposal, the student may sign up for Preparation for Thesis course (598A) and may begin work on the thesis itself. This course should be taken at some point during the last year of study.

3. Students working towards a professional degree, M.Arch. II (Master of Architecture), are required to complete a minimum of 18 courses, of which at least 15 must be taken at the graduate level. A total of at least 72 units are required. The courses must be distributed in the following way:

One core sequence (three courses) should be chosen from the area of Theory and Methods.

One core sequence (three courses) should be chosen from the area of Professional Application.

One of the above sequences should be taken as a primary area of specialization and the other one as a secondary area. The students are advised to take all the recommended courses in their primary area of specialization. The secondary area may be taken as a sequence of core courses only.

In certain primary areas of specialization a Letter of Certification is conferred at graduation.

4. Eleven courses are to be electives. Among these are the recommended courses in the area of primary specialization. Three electives may be taken at large from upper division or graduate courses offered campuswide. For students requiring greater interdisciplinary study, permission may be granted by the Advanced Graduate Studies Curriculum Committee to increase this number.

5. At least five of the above courses must be numbered in the 400 professional series. Three of these must be studios.

6. Thesis Preparation course (598A) must be taken at least once.

M.A. in Architecture and Urban Planning (Architecture/Urban Design Program)

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 project is required. Three faculty members (at least two from the School) will serve as a thesis project committee. When all three have signed the thesis proposal, the student may sign up for the Preparation for Thesis (course 598A) and begin work on the thesis itself. The 598A course should be taken at some time during the last year of study.

3. Students working towards a M.A. are required to complete a minimum of 16 courses (with a total of at least 64 units) of graduate or upper division work. At least 12 of these courses must be taken at the graduate level.

4. The M.A. student is required to choose 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. Thesis Preparation course (598A) must be taken at least once.

Certificate of Specialization in Architecture/Urban Design

1. A course of study in an approved field of specialization.

2. The course of study must include 36 units (9 courses) in the 200-500 series.

3. The minimum residence requirement is three quarters as a full-time student.

4. No work completed for another graduate degree or certificate will be applied to the work required for this Certificate.

5. Each Certificate student will be required to adhere to the standards set by the Graduate Division.

6. The candidate must be recommended for the Certificate by the Head of the Architecture/Urban Design Program and the Dean of the School.

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 3-year course of study. Occasionally, students who have already demonstrated superior design skills will elect to do more research-oriented work in place of this design presentation. These final projects are presented to a team of instructors, selected by the Department, who evaluate the work. Because of the format required by the nature of an architectural presentation, the projects are all classified as "Comprehensive Examinations."

Students should obtain faculty approval of project topics at least three months, and preferably six months, before their presentation dates.

M.Arch. II and M.A. students can choose to present a design project (Comprehensive Examination Plan) or to do a research thesis. They should make this determination at least three months prior to their anticipated date of graduation.

Regardless of the format they select, students in the Advanced Graduate Studies program each have an advisory committee composed of three faculty members, one of whom may be from an outside field. Selection of these committee members is confirmed at the time the

student files an Advancement to Candidacy petition (at least three months prior to graduation). These committees approve theses and comprehensive design projects at their discretion.

Aside from the thesis or final design project, no other written or oral examination is required.

Time to Degree

The normal length of time for completion of the M.Arch. I degree is nine academic quarters (three years). The average length of study for the M.Arch. II and M.A. degrees is six academic quarters (two years). The Certificate of Specialization in Architecture/Urban Design is a one-year program, requiring three academic quarters of study. There is no summer program offered by the Graduate School of Architecture and Urban Planning.

500 Series Course Requirements

All students in the M.Arch. I, M.Arch. II and M.A. programs must enroll in at least 4 and no more than 8 units of 598, Thesis Preparation. Students may also apply a limited amount of 596 elective coursework toward the unit requirements for graduation.

Students who wish to enroll in a 596 course must first obtain the permission of their adviser. A student in the M.Arch. I program who wishes to apply more than 8 units must first obtain the permission of the M.Arch. I Curriculum Committee. A student in the M.A. program or in the M.Arch. II program who wishes to apply more than 12 units must first obtain the permission of the Advanced Graduate Studies Curriculum Committee. A student in any program who wishes to apply more than 16 units must petition the Graduate Division for permission to exceed the limitation. No more than 8 units of the total 596 coursework taken outside the Graduate School of Architecture and Urban Planning may be applied toward graduation.

All independent work must be undertaken with the guideline and approval of an Architecture/Urban Design faculty member and will be evaluated on a Satisfactory/Unsatisfactory basis.

Disqualification and Appeal of Disqualification

The progress of students enrolled in the M. Arch.I program is regularly reviewed, in addition to the major review at the end of the first year. Students who demonstrate real problems in their academic work are generally required to take some remedial course of action. In rare cases, students who subsequent to this review do not improve their marginal status, may be asked to leave the program. Students who wish to appeal this decision may petition both the M.Arch. I Curriculum Committee and the Program Head.

Students enrolled in the M.Arch. II or M.A. programs who demonstrate only marginal scholarship,may be referred to the Advanced Graduate Studies Curriculum Committee for review.

Other Relevant Information

Currently, UCLA does not offer a doctoral degree in Architecture.

Urban Planning Program

The Urban Planning Program in the Graduate School of Architecture and Urban Planning offers a curriculum leading both to the Master of Arts and the Ph.D. degrees.

Admission Requirements. Each September, the Graduate School of Architecture and Urban Planning publishes a Program Statement which provides descriptions of the programs offered and contains the Departmental Supplement Application. Prospective "Urban Planning" students may obtain this brochure and an Application for Graduate Admission by writing to: Admissions, Urban Planning Program, Graduate School of Architecture and Urban Planning, University of California, Los Angeles, 405 Hilgard Avenue, Los Angeles, CA 90024.

Applications to the program are reviewed by an Admissions Work Group of 10 to 12 members including both faculty and students. The group is chaired by a faculty member who is appointed by the Head of the Program.

Grade point averages, letters of evaluation, a statement of purpose, and relevant experience are all considered in the review process for admission. Applicants are encouraged to submit 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.

The statement of purpose should be no more than two or three pages in length. It should include a concise description of past and present education and employment experiences, how these experiences relate and have led to the choice of urban planning as a career objective, and a statement describing a specific focus in planning in terms of research interests or practice-oriented goals. This is especially important for applicants to the doctoral program. Three letters of recommendation should be submitted, written by persons, such as instructors or employment supervisors, who are in a position to describe the applicant's intellectual and professional capabilities in depth. A maximum of two work samples may be submitted in support of the application (e.g., reports, papers, slides, etc.). If team reports are submitted, the applicant's individual contribution must be clearly indicated. Samples written in a foreign language cannot be considered. Work samples will be returned only upon request. (Applicants in the U.S. must enclose a self-addressed, stamped envelope.)

Personal interviews are sometimes requested by the Admissions Work Group on an individual basis after application materials have been reviewed.

To apply to the Urban Planning Program at UCLA, the following materials, in addition to those required by the Graduate Admissions Office, must be submitted to the departmental address indicated above.*

1. the Departmental Supplement to the graduate application (contained in the School Program Statement),
2. three letters of recommendation,
3. a statement of purpose and goals,
4. one copy of transcripts from each college attended (Applicants educated outside the U.S. should send two copies of transcripts to Graduate Admissions for evaluation; one copy will then be forwarded to the department.),
5. TOEFL scores (as stated above).

The Urban Planning Program *admits students for the Fall Quarter only.* Students who are admitted but do not enroll are not guaranteed admission at a later date.

Advising. Graduate Counselor: Barbara Vineyard, Graduate School of Architecture and Urban Planning, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024.

The Graduate Counselor assigns temporary faculty advisers to new students on the basis of similarities in student-faculty interests. Students are expected to select a permanent adviser by the end of the Winter Quarter of their first year.

Ongoing evaluations of students' progress are made at the beginning of each quarter, when students meet with their advisers to determine a course of study which best suits their needs and interests within the context of the general departmental and University requirements.

Doctoral students meet with their adviser and one other faculty member from their area of concentration for a formal progress review at the beginning of their second year of studies.

Areas of Concentration. Students should choose an area of concentration by the end of their 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, the deterioration of inner city neighborhoods present problems which call for comprehensive analysis and integrated solutions. Planning, in these contexts, characteristically starts from a concern with the region or community as a whole, and works towards a coordinated set of social, economic, political and spatial actions, designed to reinforce each other.

*Please be certain to clearly label materials "Urban Planning Program." If materials are not so labeled, they may be forwarded to the Architecture Program, and this may cause delay in consideration of an applicant.

Within this area, students are expected to choose an emphasis either on developments within the United States and other advanced industrial nations, or on problems of development in newly industrializing countries.

Social Policy and Public Services. While the urban and regional development concentration approaches issues through relationships between communities and regions, 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 semi-publicly. 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. Planning actions almost always have some effect on, or are affected by, the natural environment. Environmental planners are specifically concerned with developing environmental policy, interpreting the appropriate technical information for use in planning decisions, and contribution from an economic/ecological perspective to the process for resolving tradeoffs among social priorities.

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, students can choose one of three specializations: the history, theory and criticism of the built environment; public policy and the built environment; or urban design and planning. The history, theory and criticism of the built environment emphasizes the economic, social and cultural analysis of buildings and cities. Public policy and the built environment stresses housing, the historic preservation of the urban fabric, and physical planning skills such as zoning, design, review processes, and public sector development skills. For students who choose to emphasize urban design and planning, the program offers studio and workshop courses. Students must have a bachelor's degree in architecture, or undertake preparatory work in design in addition to the course requirements of the program if they wish to specialize in urban design rather than history or public policy.

Additional Areas of Concentration. In special circumstances, individual students may devise their own area in consultation with appropriate faculty members. Final approval of the proposed additional area of concentration must be obtained from the Program Head.

Comparative Development Studies. A number of students have a major interest in planning, teaching, and research in developing countries. Possibilities include direct hire by governments and educational institutions abroad, employment by international agencies, and private consulting. A number of courses on the problems of urban and regional development in industrializing countries and the transition to a global economy are offered each year. Invited lecturers and special seminars complete this program emphasis, which is articulated with one of the regular areas of concentration, such as Urban and Regional Development or Social Policy and Public Services (see also articulated degree program with Latin American Studies).

Students wishing to pursue development studies at either the M.A. or Ph.D. level should contact either Professor John Friedman or Professor Edward Soja.

Master of Arts in Architecture and Urban Planning (Urban Planning Program)

Admission to Master's Program. Undergraduate course work in both microeconomics and mathematics is recommended for all applicants. Experience in planning or a related field is also recommended.

Course Requirements. Master's students must complete a minimum of 72 units. Students generally take 12 units per quarter, completing the program in two years.

A minimum of 13 courses must be graduate courses (all 200 series courses with the exception of up to two courses or 8 units of 500 series courses) in urban planning or a related field.

The remaining five courses (not more than 20 units) may be any combination of 100, 200, or 400 series courses. A limited number of "elective" 500 series courses may also apply toward the degree (see below, *500 Series Course Limitations*).

Core Course Requirement:

The core areas comprise knowledge common to all areas of planning, regardless of the specific focus of the student. Seven core courses are required:

AUP 220A-Quantitative Analysis in Urban Planning I is required (waiver by examination).

AUP 220B-Quantitative Analysis in Urban Planning II is required.

AUP 207-Public Resource Allocation is required.

Two core courses in "Theory and Context" are required.

Two (three, if AUP 220A is waived) additional core courses are required from a selection of 14 remaining core courses in "Methods", "Theory and Context", and/or "Practice."

Upon entering the Program, all students must pass examinations indicating competence in basic mathematics and microeconomics before they will be permitted to enroll in AUP 220A and 207 respectively. Copies of sample examinations and references to materials to be mastered for passing these examinations will be mailed with admission offers to applicants accepted into the Program. An undergraduate course in college algebra or pre-calculus should provide suitable background to pass the basic mathematics examination. An undergraduate course in microeconomics should be sufficient preparation for the microeconomics examination.

The examinations will be administered during the first week of the Fall Quarter and may be repeated. Students who do not pass either or both examinations will be advised to take Math 1A or 1B and/or Econ 1, 100, or 101A at UCLA during their first year of studies. Credit for these courses will not normally count toward the master's degree.

Students are strongly encouraged to prepare for the examinations before coming to GSAUP so they can take AUP 220A and 207 during their first quarter of studies.

Area Course Requirement:

Master's students must select an area of concentration. A list of courses is prepared for each area of concentration, from which students are required to choose at least five; two are generally specified.

Two Field Projects Courses (8 units) are required (subject to waiver).

Students are encouraged to seek waivers for requirements which have been met in their previous education.

Thesis or Comprehensive Examination Plan. In partial fulfillment of the requirements for the M.A. degree, students are required to complete either a thesis or one of the two comprehensive examinations (Plan A or Plan B). These three options are described in detail below.

Master's Thesis. The thesis is intended to provide a student with the opportunity for independent scholarly research, and should be the length and quality of a publishable journal article. In order to meet established deadlines, students are urged to commence thesis work not later than the Fall Quarter of their second year. Academic credit for thesis preparation is given through course 598P. The thesis is accepted after it meets the approval of the thesis committee, consisting of three faculty, and general University thesis requirements.

Comprehensive Examination 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 course 597P (Preparation for Comprehensive Examination). Guidance of the long-term project rests with a committee of at least two faculty members and a representative of the client.

Students are encouraged to take the *Comprehensive Planning Project Course* (AUP 217AB) that is offered each year to fulfill the Comprehensive Exam requirement. This project course is taught by at least two faculty

members, normally representing different Areas of Concentration, and brings students of varying backgrounds and interests together in the joint solution of a problem. Each project counts as the equivalent of two courses, and normally spans two quarters.

Comprehensive Examination Plan B (2-week examination). Examinations for all Areas of Concentration are normally offered during the break between the Winter and Spring Quarters. (By offering the examination early, the student who writes an inadequate response will receive feedback in time to rewrite part or all of the exam, and still be eligible for graduation by the end of Spring Quarter.) Each area-of-concentration faculty constitutes a committee for offering, reading, and grading the examination.

Time to Degree. From admission to the master's program, normative time to award of the degree is six quarters (12 units of coursework per quarter).

500 Series Course Limitations

596P-Research in Planning (2-8 units), letter graded.

597P-Preparation for the Comprehensive Examination for the Master's Degree or Qualifying Examination for the Ph.D. Degree (2-8 units), S/U graded.

598P-Preparation for Master's Thesis in Urban Planning (2-8 units), S/U graded.

Sixteen units of 500 series courses may apply toward the total course requirement for the master's degree.

Eight units of 500 series courses may apply toward the minimum graduate course requirement.

Other Relevant Information

Field Work. Master's students who come to the Graduate School of Architecture and Urban Planning without previous experience in planning are required to complete a minimum of 8 units of field work. Field work is defined as some type of clinical or "real world" experience with a planning office, a private organization which is involved in planning, a community action agency, or applied research within a clinical context (excluding conventional university-based research projects).

Students may fulfill this requirement during the academic year by enrolling in courses AUP 223B, 496F and/or (if work is available on a client project at the Urban Innovations Group) 490. Alternatively, field work may be conducted during the summer between the first and second year of studies, with credit received (AUP 496F) in the following Fall Quarter. Students who plan to do field work during the summer must make prior arrangements for faculty supervision.

Students may petition to waive up to 8 units of the field work requirement. Those who have had at least one year of professional experience at a responsible level prior to entering the program may, upon petition to the Field Work Coordinator, receive a waiver of the full 8 units. Those with less than one year experience may obtain a partial waiver. The request must be submitted by the end of the first year of studies and be accompanied by a report, in the form of an evaluative paper, which will be assessed by the Field Work Coordinator.

J.D./M.A. Concurrent Degree Program

The aim of the J.D./M.A. Program is to provide an integrated professional curriculum for law and planning students specializing in the legal aspects of urban problems. Education in planning offers opportunities for learning theories and methods that permit comprehensive identification and treatment of urban problems. Education in law leads to mastery of institutionalized treatment of urban problems. The concurrent curriculum is open to students interested in any of the areas of concentration in the planning program.

Admissions. Persons interested in the concurrent degree program must apply and be admitted to the School of Law, the Urban Planning Program, and the Graduate Division. Applicants should contact the Law School Admissions Office regarding admission requirements and application procedures and deadlines for the School of Law. In addition, applicants should follow the normal procedures for application to the Urban Planning Program and the Graduate Admissions Office.* Applications to the concurrent program by first-year law students will also be considered.

Degree Requirements. The concurrent degree program requires the application of some of the same coursework towards both the J.D. and M.A. degrees. During the first year, the student follows the required law curriculum. During the second and third years, the student takes (a) the equivalent of 36 quarter units** to be applied toward the urban planning degree, and (b) the necessary courses required to complete the law degree.† Of the 36 quarter units toward planning, three courses must be taken from the list below, and the balance will be taken from planning courses. The student's fourth year will be spent completing the coursework necessary for the planning degree (i.e., 36 additional quarter units). Fulfillment of the field work requirement in Urban Planning will be handled on an individual basis.

For additional information, contact the Graduate Counselor.

*Applicants need not pay two application fees and may request that a payment of fee verification be forwarded from the Graduate Admissions Office to the Law Admissions Office. All application materials should be clearly marked "J.D./M.A. (Urban Planning)."

**1 semester unit is equivalent to 1.5 quarter units.

†Consult "Instructions for Concurrent Degree Students" distributed by the School of Law.

Cross-Listed Courses. The School of Law is on the semester system and therefore Fall courses begin several weeks prior to the beginning of urban planning courses. Please consult the School of Law for scheduling of the following courses:

Law M286	(3 Semester units) (Same as AUP M202A, 3 or 4 quarter units) Public Control of Land Development.
Law M285	(2 or 3 Semester units) (Same as AUP M202B, 3 or 4 quarter units) Governance: State, Regional, Local.
Law M526	(2 Semester units) (Same as AUP M202C, 3 quarter units) Seminar-Urban Affairs.
Law M287	(2 or 3 Semester units) (Same as AUP M231, 3 or 4 quarter units) Urban Housing and Community Development.
Law M290	(2 or 3 Semester units) (Same as AUP M264, 3 or 4 quarter units) Environmental Law and Policy.

M.B.A./M.A. Concurrent Degree Program

The Graduate School of Management and the Urban Planning Program offer a three year concurrent degree program leading to the award of both an M.B.A. and M.A. The concurrent degree program provides an integrated set of courses for students who seek careers which draw on general and specialized skills in urban planning and management. By merging knowledge of the workings of the private and public sectors, the Program aims to educate individuals who are not only qualified for careers in private industry or public service but who also have acquired the necessary skills to move easily from one sector to the other. The goal is to train administrators with sympathies for the operations of both types of enterprise and the capabilities to work in either. Enrollment in the program is limited to twenty students.

Admissions. Those interested in the MBA/MA Concurrent Degree Program should contact the MBA Admissions Office, Graduate School of Management, regarding MBA admission requirements and application procedures. All MBA application materials and the Urban Planning departmental supplement application (contained in this brochure) should be submitted directly to the MBA Admissions Office. Copies will be forwarded to Urban Planning Admissions. All materials should be clearly marked "MBA/MA (Urban Planning)." Your statement of self-evaluation and educational objectives, which is part of the MBA application, should explain why you want to enter the concurrent degree program. Applications are reviewed by a joint committee of faculty from both schools. GMAT and TOEFL scores are required.

Degree Requirements. A total of 35 courses (140 units) is required for the M.B.A./M.A. Concurrent Degree Program: from 18 to 23 courses in the Graduate School of Management and from 12 to 17 courses in the Graduate School of Architecture and Urban Planning. All core and concentration requirements for each program must be met, but where the two programs' core courses are substantially the same, students may choose from either program's offerings. A maximum of six courses count toward unit requirements for both degrees. Students complete all first-year M.B.A. requirements during the first year of residence and the second and third years of study are divided between both programs.

Further details may be obtained by writing to the Graduate Counselor, Urban Planning Program.

Articulated Degree Program: M.A.-Latin American Studies/ M.A.-Architecture and Urban Planning

Latin American Studies and the Urban Planning Program offer a 2½- to 3-year articulated program leading to an M.A. degree in each program.

Issues related to migration and settlement, comparative urbanization, human resources development and distribution, and rural economics are all of direct concern to planners and other policy-makers working in Latin America. In confronting such issues, a working knowledge of Latin American problems is essential. The articulated degree program provides an integrated curriculum through which students can develop professional knowledge and skills while receiving advanced area studies and language training.

Admissions. Individuals should apply through the Urban Planning Program, following the standard application procedure for Urban Planning. The statement of purpose, however, should specifically address why the applicant wants to pursue the articulated program. In addition, GRE scores are required. All application materials should be clearly marked, "MA-Latin American Studies/MA-Urban Planning." The final review of applicants will be conducted by a committee with representatives from both programs. Applications to the articulated program by *current* Latin American Studies or Urban Planning students will also be considered.

Degree Requirements. A total of 27 courses (108 units) is required for the articulated program: 18 courses for the M.A. in Architecture and Urban Planning; and 9 courses for the M.A. in Latin American Studies. Students must meet all requirements of each program and the degrees may be awarded simultaneously. Further details may be obtained by writing to the Graduate Counselor, Urban Planning Program.

Ph.D. in Urban Planning

Admission to the Doctoral Program. Students admitted to the Ph.D. program in Urban Planning must have a master's degree in planning or a closely related field from UCLA or another institution. Master's students in Urban Planning at UCLA should inform the Graduate Counselor before February 15 of their second year if they wish to be considered for the Ph.D. program for the following Fall.

Students must have a minimum of 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 Requirements. 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; Written and Oral Qualifying Examinations. Doctoral students must demonstrate a high level of competence in an Area of Concentration (major field), a minor field, and in the Planning Theory core area as measured by coursework and doctoral examinations. In addition, doctoral students must satisfy a requirement in research methods, and are required to take at least 6 units of course 208AB (Seminar in Advanced Research Methods) to aid in preparation of dissertation research and writing.

Core Examination: Planning Theory. Planning Theory is concerned with the question of how scientific and technical knowledge can be effectively joined to organized actions that are intended to produce a social benefit.

Each doctoral student must pass the examination in Planning Theory which will probe the student's understanding of the literature as well as his/her ability to apply theoretical notions in a creative way to typical problem-solving and planning situations. It is recommended that the student take course 201B (Introduction to Planning Theory) and 201C (Colloquium in Planning Theory) in preparation for the examination. An extensive reading list is available to aid the student in preparing for the exam. (See Graduate Counselor.)

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 (1) statistics, and (2) their application to urban and regional studies and planning. The statistical tools include probability theory, probability distribution, sampling, survey methods, estimation techniques, hypothesis testing, analysis of variance, correlation, regression, and factor analysis. Students may also study methods which address research of a more qualitative nature, including ethnomethodology, historiography, and Marxist methodologies.

To fulfill the research methods requirement, students 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 these courses must be 220B (Quantitative Analysis in Urban Planning II) or the equivalent. The three courses selected must be approved by the student's adviser before beginning the sequence, and the sequence should begin during the first year in the Ph.D. program.

Major Field Examination. The Major Field Examination is designed to test the student's indepth knowledge and understanding of his/her major field (area of concentration). The student is expected to demonstrate a level of competence equivalent to teaching a beginning course in that field and should be prepared to analyze and justify major policy options for the solution of those problems he/she defines as being critical in the area covered by the examination. The examination has two parts, one written, one oral, and in addition, requires submission of an acceptable written "Statement of Interest".

The Major Field examining board will consist of three faculty in the student's major field, who will write and grade the written examination and administer the oral examination.

The Major Field Exam is given twice a year for each major field and is usually taken within six months after completion of the Planning Theory Examination. Students may receive academic credit for the preparation of the exam by enrolling in 597P. Students are expected to satisfy the Planning Theory Examination requirement prior to taking the Major Field Examination.

Minor Field Requirement. The Minor Field Requirement is intended to provide students with a breadth of knowledge which extends beyond the specific area of the major field. This requirement is flexible and closely adjusted to the dissertation focus of the student. It can be fulfilled in two ways:

1. Twelve units of coursework which (a) constitute a coordinated package of courses in the subject of the minor field, (b) are taken in an area of concentration other than the student's major field, and/or in another department (not necessarily in a single department), and (c) in which a passing grade ("B" or better) must be received, or

2. Passing the written portion of a Major Field Examination in an area other than the student's major field.

Oral Candidacy Examination. After successful completion of the Planning Theory Examination, Research Methods Requirement, and the Major and Minor Field Exam/Requirement, the student will petition the Graduate Division for approval of his/her doctoral committee.

The doctoral committee administers the Oral Candidacy Examination at which the student defends his/her dissertation prospectus. To assist the student in the development of the proposal, Ph.D. students are required to complete 6 units of the Seminar in Advanced Research Methods (208AB).

Final Oral Examination Following Completion of the Dissertation. This examination, which is optional at the discretion of the doctoral committee, involves a defense of the completed dissertation.

Time to Degree. Normal progress toward the degree, from admission to the doctoral program to award of the degree: 15 quarters (five years).

Disqualification and Appeal of Disqualification. For every student whose grade point average is below a 3.0 (i.e., on probationary status) or who is making insufficient progress toward the degree, a Counseling Board of three faculty members is established. The Board has the responsibility of reviewing the student's record, determining strengths and weaknesses, and aiding the student in raising his/her academic performance to University minimum standards. In addition, the faculty and the Graduate Counselor meet each Winter or Spring Quarter to discuss the progress of all registered students.

Recommendations for termination of students on probation, students admitted provisionally, or other students who are not making sufficient progress toward the degree may be made in two ways: (1) The Counseling Board may recommend termination of a student by submitting a written statement to the Program Head discussing the reasons for the recommendation. (2) The Program Head, acting in consultation with the student's adviser, may identify a student as subject to termination. In either case, the student will be asked to withdraw from the program. Such students may petition to have their situation reviewed by a 3-person faculty Review Board.

Projects in Architecture and Urban Design

Note: While the required courses are regularly scheduled, the elective courses are not all offered every year.

401. Projects in Architecture. Laboratory, three hours. Prerequisite: consent of instructor. A number of different projects in relevant problem areas will be offered by faculty members from which the student may choose. May be repeated for credit.

402. Projects in Urban Design. Laboratory, three hours. Prerequisite: consent of instructor. A number of different projects in relevant problem areas will be offered by faculty members from which the student may choose. May be repeated for credit.

403, Project Studio With Specific Topic. (½ to 1 course) Studio, eight hours. Prerequisite: previous courses of particular sequence or consent of instructor. May be repeated for credit.

403A. Projects in Systems Building.

403B. Projects in Energy Conserving Design.

403C. Projects in Man-Environment Relations.

403D. Projects in Educational Facilities.

403F. Projects in History.

403G. Projects in Design Methodology.

403H. Projects with Specific Topic: Projects in Computer Aided Design. (½ to 1 course) Prerequisite: previous course(s) in particular sequence or consent of instructor. May be repeated for credit.

411. Introductory Design Studio. Studio, twelve 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, the student then undertakes 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.

412. Building Design Studio. Studio, twelve 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.

413. Building Design with Landscape Studio. Studio, twelve hours. Prerequisites: courses 411, 412 or consent of instructor. Building Design and Site Planning in relation to water, land forms and plants in natural landscape, with special attention to natural light, heat and ventilation.

414. Major Building Design I. Studio, twelve hours. Prerequisites: second year standing. Design projects which enable students to concentrate on specifically architectural issues, with emphasis either on treatment in breadth of large scale projects, or exploration in depth and detail of smaller scale projects. Students will 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.

415. Major Building Design II. Studio, twelve hours. Prerequisite: completion of 414, Major Building Design I. Design projects which enable students to concentrate on specifically architectural issues, with emphasis either on treatment in breadth of large scale projects, or exploration in depth and detail of smaller scale projects. Students will 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 will be placed upon integration of environmental control systems.

416. Comprehensive Design Studio. Studio, twelve hours. Prerequisite: completion of required course work up to first quarter, third year. Consent of instructor. Course will complete regular required sequence of design work, preparing students for the third year thesis preparation. Comprehensive design projects will be structured to test students on integration of structural aspects, mechanical systems, site planning, and climatic considerations within their design solutions.

421. Architectural Drawing. Discussion, three hours; laboratory, three hours. Description of architectural drawing techniques and skills, including: sketching, diagramming, freehand drawing, drafting techniques, introduction to axonometric projection and perspective.

422. Advanced Architectural Drawing. (½ to 1 course) Discussion, three hours; laboratory, three hours. Prerequisite: course 421, or consent of instructor. The course continues with an emphasis on the exploration of the interrelationship between drawing and design. More advanced design strategies and modes of graphic exploration and presentation are developed.

Methodology and Computer Aided Design

224. Methodology: Design Theory. Lecture, three hours. A survey of the literature on systematic methods and design including problem-solving, information handling, artificial intelligence, and decision-making in the design process. May be repeated for credit. Mr. Stiny

225A. Information Systems. Discussion, three hours. Prerequisite: consent of instructor. Information processing models of design. The relations between information flows and organizational structure. New techniques for information handling in design: storage and retrieval systems, automated document production, computer-assisted design techniques. Mr. Mitchell

226A. Computer Applications in Architecture and Urban Planning (Introductory). *See* "Interprogram Courses."

226B. Computer Applications in Architecture and Urban Planning (Advanced). *See* "Interprogram Courses."

227A. Computer Graphics. Discussion, three hours. Prerequisite: consent of instructor. Assuming a basic familiarity with computer programming, the course provides an introduction to the theory, techniques, and applications of computer graphics in architecture. It consists of a series of lecture/seminars on technical topics, plus intensive practical work conducted on two storage-tube graphics terminals. Mr. Mitchell

227B. Computer Aided Design. Discussion, three hours. Prerequisite: consent of instructor. An examination of existing computer-based systems for aiding decision-making. Topics will include artificial intelligence, self-organizing systems, and hardware capabilities and limitations. An attempt will be made to develop and test components of a computer design partner. Mr. Milne

228A. Mathematical Models in Architectural Design. Lecture, three hours. Prerequisite: consent of instructor. An introduction to concepts and techniques of mathematical modeling in architecture. Basic mathematics needed to develop models. The formal description of built form: data structures. Practical case studies and exercises dealing with the use of mathematical models in architectural design. Ms. Liggett, Mr. Mitchell

228B. Research in Design Methods. Lecture, three hours. Prerequisite: consent of instructor. Developmental work in a specific method of design. Theoretical and operational problems of a design method: degree of systemization, man-machine relationships, areas of application, problems of translation and compatibility with other methods.

Environmental Technology

431. Structures I. Lecture, three hours. Prerequisites: basic algebra, geometry, trigonometry and 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

432. Structures II. Lecture, three hours. Prerequisite: completion of Structures I, 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

433. Structures III. Lecture, three hours. Prerequisite: Structures II, 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

434. Structures IV. Lecture, three hours. Prerequisites: Structures I, II, III, 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

436. Construction Documents. Laboratory, eight hours. This course considers the relationship of the design processes from schematic design through the production of all of the documents for the construction contract. A simple structure will be designed and the design development will be carried through working drawings and an outline form of specifications.

437. Building Construction. Lecture, four hours. Introduction to the first principles of structure and building construction. Building elements are not only explored for their structural qualities and possibilities of their production and assembly, but also concerning their formal and functional properties, and particularly their application and role within a building.

438. Systems Building. Discussion, four hours. Prerequisite: consent of instructor. Survey of past and present developments in Europe, the USSR and the USA. Impacts, demands, socio-economic 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. Mr. Schulitz

439. Methods in Building Systems Development. Base for open building systems: reference system, component compatibility, measurement regulation, modular coordination. In-depth study of past and present research and developments, such as SCSD, SAR. Mr. Schulitz

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. Mr. Johnson

442. Building Climatology. Lecture, three hours. Prerequisites: basic physics, completion of first year in Master of Architecture I, consent of instructor. 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 land form to modify microclimate. Mr. Givoni, Mr. Johnson

443. Passively Integrated Solar Systems. Lecture, four hours. Prerequisites: Building Climatology 442, and consent of instructor. The course will analyze the different passive integrated solar systems for heating and cooling, consider their anticipated performance and suitability for different climates and building types. The course will be focused on quantative aspects, including calculations of performance in terms of energy saving and expected indoor comfort conditions. Mr. Givoni

444. Light and the Visual Environment. Lecture, two to four hours. Prerequisite: Structures II, or consent of instructor. Explores 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: Structures II, or consent of instructor. Explores 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.

446. Introduction to Energy Conserving Design. Prerequisite: Master of Architecture I students must have taken Building Climatology or equivalent. Others: consent of instructor. A professional practice-oriented view of introductory energy flow and thermal comfort concepts. Review of existing and developing Energy Conserving Design and Management "active" and "passive" techniques. Application of solar technology to architectural design within the ECD/M context. Explanation of historical as well as current and proposed energy/resource consuming, climate responsive buildings and cities. May be repeated for credit. Mr. Schoen

Socio-Physical Research and Design

192. Housing and Settlement Patterns. Patterns of spatial organization in housing and small settlements in a range of cultures. Interaction between spatial patterns and prevailing social attitudes toward the individual, the family, land ownership and toward authority, aggression, and communalism.

258. Research in Human-Environment Relations. (½ to 2 courses) Selected topics for research in social and behavioral relations to the environment. This course is intended to provide a teaching space for visiting teachers in the social and behavioral sciences. It may be repeated since its contents are not set and differ each time it is offered.

292. Social Building Theory. Prerequisite: consent of instructor. Review of basic literature on application of social science theory and data to the design and development of socio-technical systems. Mr. Rand

294. Environmental Psychology and Sociology. Prerequisite: consent of instructor. Environmentally based and interpreted approach to psychological states and individual and social behavior. Territorality, density, stress and adaptation, environmental cognition, aesthetics and preferences are considered. Mr. Rand

295. Cognitive Processes of Design. Lecture, three hours. Review of concepts of perception and conception (e.g., imagery, reasoning, memory, representation, communication) as they apply to the design process. Special emphasis on the role of visual and schematic thinking in design problem-solving.

296. Social Analysis of Buildings and Settings. Prerequisite: consent of instructor. The class will conduct a ten-week evaluation of a building in Los Angeles, designed and built within the past five years, where the architect, builder, initiator or other parties involved in the inception process are available for cooperative review of the facility. The structure of the course involves a review of evaluation theory in the first three weeks, and a series of exercises performed on a single building, looking at its effectiveness and character through a variety of approaches to evaluation. The class will produce a comprehensive evaluation using multiple-methods for each building evaluated. Mr. Rand

297. Group Process in Design. Prerequisite: consent of instructor. This course aims 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.

298. Social Meaning of Space. Discussion, three hours. Traces the evolution of the concept of space from its origins in ritual and primitive social organizations. Concentrates on the child's evolving conception of space, literature on perceptual development and studies of adaption to the spatial order of the human-made environment. Mr. Rand

299. Application of Behavioral Research to the Design Process. Lecture, three hours. Prerequisite: course 258 or consent of instructor. Application of behavioral research to the design process. This course attempts to begin the difficult task of bridging the gap between research and design by building upon the ideas and techniques generated in SAUP 258 and applying them to research in a field situation and the translation of the results of this research into a preliminary design solution in a selected community. Emphasis will be placed upon problem definition, the generation of meaningful research questions and understandable results, iterative approaches to the research/design interface, and novel ways of presenting design ideas. May be repeated for credit.

Architectural and Urban Analysis

218A-218B. Urban Structure: Analysis and Modeling. Discussion, three hours. Prerequisite: consent of instructor. Generation of conceptual frameworks on the urban structure based on empirical data, urban theories, and mathematical models. Individual and group research on selected aspects of urban systems. Application of models in decision-making, particularly in urban design projects. Mr. Lang

238. Research in Architectural and Urban Analysis. Discussion, three hours. Prerequisite: consent of instructor. Selected topics in architectural and urban systems. Documentation and project work; field work.

255. Urban Morphology: Definitions and Consequences. Lecture, three hours. An analysis of urban spatial form and its socio-economic and behavioral bases and consequences. Special emphasis is placed on ecological approaches (e.g., social area analysis, urban growth models, factorial ecology) and behavioral analysis (cognitive mapping, urban imagery, attitudes toward human and material resources).

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, socio-economic and technological framework of urban systems and its dynamic interrelations. Mr. Lang

275. Urban Form. Discussion, four hours. Seminar on recent and historical urban design projects, elucidating the planning objectives, structuring principles, operational characteristics, physical components, and environmental consequences of each project. Development of a definitional framework, analytical criteria, and practical direction in the examination of urban form.

279A. Housing for Developing Countries. Discussion, three hours. Considerations of socio-cultural, 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

289. Special Topics in Architecture and Urban Design. (½ to 1 course) 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. Design Seminar in Educational Systems and Facilities. Laboratory, six hours. Explores education as an environmental system, including goals, institutional structure, functions, technology, interactions with other social systems, and possible innovations. Examines implications for design of educational structures, facilities, equipment, and arrangements. Requires design and critique of alternative physical or functional features. May be repeated for credit. Mr. Vreeland

Environmental Management

203A-203B. Decision-Making in Planning and Design. Lecture, three hours. Statistical decision theory and alternative design solutions for coping with different degrees of future uncertainty in planning; nature of models for rational behavior in presence of conflicts of interest; individual and group decision-making under uncertainty. Mr. Adelson

204. Imaging the Future. Lecture, 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

272. Real Estate Development for Planners and Architects. *See* "The Built Environment."

291. Architectural Programming and Theory. Discussion, four hours. The first part of the course explores 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. In the second part of the course, the theoretical background is applied in the development of a program for the thesis.

460. Architectural Management. Lecture, three hours. Problems of land development and real estate. The professions of architecture and planning: traditional and innovative organizational forms. Manufacture, distribution, transport, and on-site construction/assembly. Controls and resources: government programs and restrictions; financing and administration; costs estimation; materials and labor availability.

461. Professional Organization and Practice. Lecture, three hours. The profession of architecture: historical development, relation to other professions and disciplines, the changing role of the architect. Architecture and professional societies: The American Institute of Architects, state and national registration boards, educational accreditation. Legal and ethical questions relating to the practice of architecture. Emerging forms of architectural practice.

Mr. Phelps

Architectural Theory, History and Criticism

189. Pre-Modern and Post Modern Architecture. Consideration of nineteenth century revivalism and the response of architects to a growing historical awareness. Issues of eclecticism within the Beaux Arts and Art Nouveau movements will be studied. These same themes will be reconsidered in terms of the post modern era. Mr. Jencks

191. Modern Architecture. A brief examination of the tenets of Western Architecture after the Renaissance, the accelerating eclecticism of the nineteenth century, the basis of the revolutionary movements of the twentieth century in Germany, Holland, Austria, Italy, France, Russia and the United States, and the subsequent extension and rejection of those movements after World War II. Though the "International Style" is the central figure of this drama, its ancestors occupy the stage as well.

201A. Architectural Theory. (½ to 1 course) Lecture, three hours. Varying present-day and historical descriptive and normative frameworks for the discussion of architecture and its relation to other aspects of the environment. The effects of literary, art, and other forms of criticism on architectural theory. Epochs and styles, ideologies and social settings for architecture.

219. Special Topics in the Built Environment in the United States. *See* "The Built Environment."

281. Introduction to the History of the Built Environment in the United States. *See* "The Built Environment."

282A. Image and Cultural Symbolization. Lecture, three hours. This course will demonstrate how modern architecture is a language that sometimes fails to communicate its intended messages. It will treat the division between elitist and popular architecture and suggest means of designing to overcome this division; basically by using multiple "codes" of architectural meaning. Students will be expected to either analyze a building semiotically, or design a building using the various "codes." Mr. Jencks

283. History of the American Household and the American House. *See* "The Built Environment."

284. The Ideal City in History. *See* "The Built Environment."

286. History of Specific Building Types. Lecture, three hours. Consideration of socio-economic and historical factors involved in the development of a specific building type, i.e., theaters, schools, museums and hospitals. May be repeated for credit.

Mr. Aran

287. Ancient and Islamic Architecture in the Mediterranian Area. Prerequisite: consent of instructor. The aim of this course is to study the influence of the physical and social environments on building activity throughout the history of societies around the Mediterranean. Special consideration is given to architectural development in Greece.

Mr. Aran

288. Architectural History: Medieval Period. Prerequisite: consent of instructor. A survey of European architecture from the year one thousand with selected buildings and environments considered in terms of the cultural contexts. Mr. Aran

Planning Theory

197. Planning for Minority Communities. Lecture, three hours. This course will introduce the student to inner city policy issues on three separate levels: (1) each student will develop 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 which emphasize minority issues which affect implementation.

Mr. Estrada

201B. Introduction to Planning Theory. The course provides a broad overview of the history of planning theory and focuses on current theories concerning the linkage of a scientific-technical intelligence to organized social actions. May be taken by upper-division, undergraduate students with consent of instructor. Mr. Friedmann and the Staff

201C. Colloquium in Planning Theory. Prerequisite: enrollment limited to Ph.D. students. An in-depth and critical examination of major issues in Planning Theory. Faculty and students jointly select topics of importance for discussion. This course is graded S/U. Mr. Friedman and the Staff

209. Special Topics in Planning Theory. (½ to 2 courses) Lecture, three hours. Seminar on topics in planning theory selected by the faculty. May be repeated for credit.

212. Planning Theory: Time and the Future. Analyzes how time is, and can be, used as a factor in urban decisions and actions. Focuses on concepts and methods for dealing with the middle- and longer-range future, including asset accounting, time- and goal-oriented systems analysis, and different approaches to "planning for a better future".

Mr. Perloff

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 will be viewed as a response to changing needs and as a catalyst for emerging roles for professional planners. Several short projects are designed to expose students to real world planning problems and to the various viewpoints and methods that the Areas of Policy Concentration specialties would bring to bear. 223A is generally taken Fall Quarter of the first year as an introduction to 223B and 223C. Mr. Heskin

Planning Methods

206. Urban Data Analysis. Lecture, four hours. This course will review research methods integrated by a common planning theme. Among the methods covered are observational methods, data collection techniques, including survey methods, and the use of available data (i.e., census data, administrative data, etc.). Analytical techniques such as index construction, standardization, and trend analysis, will also be discussed. Each method/technique will involve exercises by students. Generally taken in first year.

Mr. Levine and The Staff

207. Public Resource Allocation. Lecture, three hours. Prerequisite: a passing score on a microeconomics examination given on the first day of class. This course emphasizes the practical use of economics in analyzing public resource allocation problems. Topics covered 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

208A-208B. Seminar in Advanced Research Methods. (1 course, ½ course) Prerequisites: Ph.D. status, consent of instructor; students are, in addition, required to participate in an independent study course (from 2-4 units) in order to prepare dissertation topics to be discussed in 208B. The 208A course, offered Fall, will consist of (1) lecture-discussions on research methods; (2) lecture-discussions by visitors, mostly members of the Urban Planning faculty, leading to the identification of dissertation topics; and (3) potential topics developed by each student. The 208B course, offered in Spring, will consist of the presentation and discussion of dissertation topics, developed in detail (with bibliographies, etc.). The intercourse during Winter Quarter is intended for the development of that topic, in close collaboration with a potential dissertation adviser, through enrollment in an independent study course. This course is required of Ph.D. students, is graded S/U, and may be repeated for credit. Mr. Burns

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, Mr. Perloff

M215A. Advanced Quantitative Analysis. (Same as Geography M270.) Lecture, two hours; laboratory, two hours. Prerequisite: Geography 171 or equivalent or consent of instructor. Advanced topics in the utilization of mathematical and statistical techniques for geographic research. Emphasis on linear models, factor analysis and grouping procedures as applied to geographic data bases. Mr. Clark

M215B. Spatial Statistics. (Same as Geography M272.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: Mathematics 50 or Geography 171 and 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

220A. Quantitative Analysis in Urban Planning I. Lecture, three hours. Prerequisite: passing score on a basic mathematics proficiency examination given on the first day of class. An introduction to mathematical and statistical concepts and methods with applications in urban planning. The course will review basic mathematical concepts fundamental to planning methods and cover descriptive statistics, probability and sampling techniques. The course will also include an introduction to the use of the computer as a tool in analysis of planning-related data. Ms. Liggett

220B. Quantitative Analysis in Urban Planning II. Lecture, three hours. Prerequisite: course 220A or equivalent (demonstrated by passing score on proficiency examination given on first day of 220A course). An introduction to concepts of statistical inference and modeling with an emphasis on urban planning applications. Topics to be covered include hypothesis testing, analysis of variance, correlation, regression and causal modeling. Applications will 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 will be presented which cover the design and analysis of typical urban planning research projects. The course will also include use of the computer as a tool in statistical analysis and modeling.

Ms. Liggett

221A. Evaluation Research. Lecture, three hours. Prerequisites: courses 220A and 207. This course focuses on the conceptual approach, methods and problems encountered in conducting program evaluations. Topics covered will include purposes of evaluations, steps involved in the evaluative process, and uses of evaluation research in planning. Case studies and exercises are used as teaching techniques along with lectures provided by the instructor. Mr. Shoup

221B. Project Evaluation Methods. Lecture, three hours. Prerequisite: course 207. This course examines ways of estimating the economic worth of public programs and investment projects. The major topics covered include cost/effectiveness analysis, cost/benefit analysis, sensitivity analysis, distribution analysis, and implementation. Mr. Shoup

226A. Computer Applications in Architecture and Urban Planning (Introductory). *See* "Interprogram Courses."

226B. Computer Application in Architecture and Urban Planning (Advanced). *See* "Interprogram Courses."

229. Special Topics in Planning Methods. (½ to 2 courses) Seminar on topics in planning methodology selected by the faculty. May be repeated for credit.

Projects in Planning

M202C. Seminar: Urban Affairs. (¾ course) (Same as Law M526.) The purpose of the course is to explore in a concrete case setting 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 to it 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. Hagman

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 counts the equivalent of 8 units, total, and will span two quarters. Because of the time required for the completion of project work, it is expected that students enrolled in a project will choose the Comprehensive Examination Plan option in place of the Master's thesis. Credit on completion of 217B.

223B-223C. Professional Development Series. Prerequisite: 223A highly recommended. A two quarter sequence concerned with problems of professional practice. Students must be working in a field setting to enroll in the course. A job fair will be held at the beginning of the Winter Quarter to place students in field settings. Students who wish to arrange their own placement and join the class may do so with the permission of instructor. 223B focuses on developing methods which integrate theory and practice through readings and individual and collective analyses of each student's experience. 223C continues the processes of 223B with the addition of a larger look at the planning profession by bringing noted professionals to the classroom to dialogue with the students. 223A is highly recommended as a prerequisite but not required. Students may wish to combine either 223B or 223C with one quarter of 496F or 490 to meet their field work requirement.

Planning, Law and Politics

M202A. Public Control of Land Development. (¾ or 1 course) (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. Hagman

M202B. Governance: State, Regional and Local. (¾ or 1 course) (Same as Law M285.) Legal problems involving local and governmental entities; sources and extent of powers and duties with respect to personnel, finance, public works, community development, and related topics. Mr. Hagman

M205C. Urban Government. (Same as Political Science M229.) Discussion, four hours. An analysis of the policies, processes, interrelations and organization of governments in heavily populated areas. May be concurrently scheduled with Political Science 197F, sec. 1. Mr. Bollens

211. Law and the Quality of Urban Life. Lecture, three hours. This course is an introduction to law as an urban system and is directed primarily toward those interested in social and advocacy planning. The course will be organized around a number of urban problems such as employment, housing, social welfare and land use and examine the law's role as a partial cause and cure of these problems. Although certain legal principles will be stressed, the course examines law as a changing process rather than a collection of principles. It is a goal of the course that the students develop a facility to interact with law and lawyers in a positive and forceful manner. Mr. Heskin

Urban and Regional Development (Area of Concentration)

M231. Urban Housing and Community Development. (¾ to 1 course) (Same as Law M287.) Lecture, three hours; discussion, one hour. The course will comprehensively consider the rebuilding and construction of American cities with the major emphasis upon 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 an emphasis on field research in lieu of a substantial portion of the final examination. Mr. McGee

232. 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

233. The Political Economy of Urbanization. An introduction to the basic concepts and analytical approaches of urban political economy, with a major emphasis on American urban problems. Topics to be covered 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

234. Seminar in Spatial Development Policy. Prerequisite: course 232 or some background in analytical human geography; or consent of instructor. An advanced course dealing with the analysis, measurement, and interpretation of spatial change in developing countries, particularly in East and West Africa. It combines an indepth examination of spatial development theory (especially with regard to spatial diffusion and settlement systems models), comparative studies in the geography of development, and a detailed assessment of some current African regional development plans. Generally taken in the second year. Mr. Soja

235A-235B. Regional Approaches to National Development. Prerequisite: consent of instructor. A two-quarter sequence dealing with questions of urbanization and rural development in industrializing Third World countries. Generally taken in the second year. Mr. Friedmann

236A-236B. Urban and Regional Economic Development. Prerequisite: course 207. Economic growth policies and development planning in cities and regions. 236A will cover basic principles of urban and regional economics as they bear upon public policy formation and urban and regional planning. 236B will focus on local economic development issues and community planning, stressing the social implications of economic change.

237. 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 a particular emphasis on the relations between regional planning and developments within Western social and political philosophy. Major concepts to be stressed include regions and regionalism, the territorial community, and the social production of space. Mr. Friedmann, Mr. Soja

239. Special Topics in Urban-Regional Development Policy. (½ to 2 courses) Lecture, three hours. Seminar on topics in urban and regional development policy selected by the faculty. May be repeated for credit.

Social Policy and Public Services (Area of Concentration)

240. Advanced Seminar in Social Policy and Public Services. Lecture, three hours. Prerequisite: consent of instructor. A seminar dealing with the general system within which services are supplied publicly or semi-publicly, the specific sectors comprising the system, and analytical techniques for evaluating the efficiency and effectiveness of services delivered to the public. Mr. Shoup

M241A. Urban Transportation Planning I. (Same as Engineering Systems M288A.) 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

M241B. Urban Transportation Planning II. (Same as Engineering Systems M288B.) Lecture, four hours. Prerequisites: courses M241A; 220B; 207 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

M241C. Urban Transportation Planning III. (Same as Engineering Systems M288C.) Lecture, four hours. Prerequisites: courses M241A-M241B; 220B; 207, 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

244. Introduction to Housing Markets. Lecture, four hours. Prerequisite: AUP 207 (or equivalent), may be taken concurrently. 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 is emphasized, 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. Finance of Local Public Services. Lecture, three hours. Prerequisite: course 207 or consent of instructor. This course introduces the theory and practice of local public finance, and provides experience on state and local fiscal planning issues. Some of the topics covered are: fiscal impact analysis, public service distribution, local revenue sources, municipal bonds, pollution taxes, intergovernmental contracting, and tax incentives for historic preservation and economic development. 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 a 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 Public Services. (½ to 2 courses) Lecture, three hours. Seminar on topics in social policy and public services selected by the faculty. May be repeated for credit.

251. Planning for Multiple Publics. Lecture, three hours. Prerequisite; recommended background in statistics and research design. Course is designed to explore the planning needs of various social groups in urban settings. Students will be required to explore existing literature and research studies to determine appropriate mechanisms of planning for multiple publics. The course will have students analyze 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. This course covers the growth and development of the individual throughout the life cycle; attention is given to four major schools of thought regarding human development, drawing implications to planning approaches. The emphasis is on the psychosocial basis of individual development and its relationship to planning.

252B. Social Policy in Human Development. Prerequisite: course 252A or consent of instructor. This seminar examines the applications of human development information on the formulation of child care and family policy. Students are given the opportunity to examine how a wide variety of data on child development, family structure, female labor force participation, and the economics of public investments are used in developing policies regarding the organization and supply of child care services.

253. Social Theory for Planners. Lecture, three hours. Prerequisite: some prior knowledge of sociological theory would be useful but not essential. The course relates the sociological tradition to issues of change, the role of the state, and the relationship between knowledge and values as they affect planning. The course concentrates on 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 will also be discussed. Mr. Marris

254. Social Research Methods. Prerequisite: course 220A or equivalent is recommended. Course reviews basic methods commonly used in planning or in applied social research. However, the emphasis is on the research process as a whole rather than specific techniques of design. Topics will include: conceptualizing the research problem; developing a research plan; sampling, instrumentation, and data collection; and time management of a research study.
Mr. Estrada

256. Social Impact Analysis. Lecture, three hours. Prerequisite: recommended: 220A-220B, a course in advanced statistics, a course in survey research and methodology; or consent of instructor. This course will explore ways of creating methods for assessing and determining social impacts on communities. Intent will be to develop both methodologies and policy formulation for assisting in community development. Enrollment limited. Generally taken in the second year. Mr. Grigsby

Natural Environment and Resources (Area of Concentration)

M195. Engineering and Environmental Geology. (Same as Earth and Space Sciences M139.) Lecture, two and one-half hours. Prerequisite: Geology 1 or 100; 111A recommended. 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

M196. Geomorphology. (Same as Geography M102.) Lecture, three hours; reading period, one hour. Prerequisite: Geography 1 or equivalent, or junior standing, or consent of instructor. A study of the processes responsible for shaping the world's landforms with emphasis on the relationship between the energy and materials involved and the magnitude and organization of the surface forms produced.
Mr. Orme

260. Advanced Seminar on Natural Environment and Resources (½ to 1 course) Discussion, three hours. Prerequisite: consent of instructor. Discussion and organized individual and group research. Exploration of broad issues related to environmental and resource planning. Generally intended for second year M.A. students specializing in Natural Environment and Resources, and for Ph.D. students. May be repeated for credit. Ms. FitzSimmons

261A. Introduction to Environmental Analysis. Lecture, three hours. Discussion of basic ecological principles relevant to environmental planning, including characteristics of ecosystems, energy transfer, biogeochemical cycles, dominance and niche theory, diversity and stability, species-area relations, etc. Attention will be drawn to the human role in modifying ecosystems. Generally taken in the first year.
Ms. FitzSimmons

261B. Environmental Management. Lecture, three hours. Prerequisite: course 261A or consent of instructor. Application of ecological principles to the analysis of environmental impacts and the management of natural and urban/regional resources.

262. Residuals Management. (½ to 1 course) Lecture, three hours. Prerequisite: course 207 or consent of instructor. Advanced seminar covering a selected topic (to be specified each time that the course is offered) in the management of atmospheric emissions or solid wastes or nuclear radiation, etc. Intended for, although not restricted to, students specializing in Natural Environment and Reources. May be repeated for credit.

263. Natural Resource Conservation. Lecture, three hours. This seminar explores, through presentations, readings, and discussion, the meaning of resource conservation, its desirability, and ways of achieving it. The focus is generally on minerals, although other resources (e.g., water, timber, wilderness) may also be considered.

M264. Environmental Law and Policy. (¾ to 1 course) (Same as Law M290.) The course first examines, from perspectives meaningful to legal institutions, the nature of environmental problems. It then considers 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 are considered. The course uses the air pollution problem as the primary vehicle for study. Mr. Krier

266. Seminar on Land-Use Planning. Lecture, three hours. Prerequisite: consent of instructor. A seminar-discussion course that builds on the basic planning concepts and knowledge discussed in other planning courses. The topics of discussion include the current practice of land-use planning, issues and problems, land-use planning as a tool for environmental protection and enhancement, and evolving policy. Ms. FitzSimmons

267. Site Planning. 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. Mr. Kamnitzer

269. Special Topics in Natural Environment and Resources. (½ to 2 courses) Lecture, three hours. Seminar topics in Natural Environment and Resources as selected by the faculty. May be repeated for credit.

The Built Environment (Area of Concentration)

219. Special Topics in the Built Environment. (½ to 2 courses) Lecture, three hours. Seminar on topics selected by the faculty. May be repeated for credit.

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 which integrate the development process with proposed design solutions which are iteratively modified to meet economic feasibility tests.
Mr. Kamnitzer

273. Comparative Settlement Forms. Lecture, one and one-half hours; discussion, one and one-half hours. Examines the nature and morphologies of villages and small towns in the Third and Fourth Worlds and in traditional areas of industrialized nations. The starting point of this analysis has been a set of "determinants" of form suggested by Amos Rapoport's *House Form and Culture* applied to a sequence of case studies, including Native American and Native Canadian villages, Anasazi settlements, cooperative and communal societies (e.g. Iban longhouses), Malaysian Kampongs, Maori, Samoan, and other Polynesian groups and examples in South America, Europe, and the Middle East.

274. Introduction to Environmental Design and Planning. Lecture, three hours. Overview of the influence of planning determinants upon the design of urban areas, with illustrations of the consequences for urban design. Generally taken in the first year.

276. Planning Workshop. (1 to 2 courses) Laboratory, six hours. Prerequisite: 421 or 422 or Art 153A-153B 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. Rural Planning With Native Americans. Treats past, present, and possible future directions of planning in Native America rural areas (reservations, communities, and nations). The course examines case studies in Native American reservation planning, such as the Rincon General Plan, or the Owens Valley, Morongo, Salt River Pima-Maricopa, and Navajo Plans, as well as certain "critical" comparative studies (e.g., the Crow and Northern Cheyenne reservations in Montana).

278. Research Methods in Human-Environment Relations. (½ to 1 course) 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 not so well known (ecological psychology, ethnomethodology). The course will emphasize the application of research methods to selected exercises and specific field situations.

281. Introduction to the History of the Built Environment in the United States. Lecture, three hours. This lecture course is an introduction to American urban, environmental and architectural history, a survey of the main economic, political, social, and aesthetic forces forming the built environment. It covers the colonial period to the present, emphasizing the importance of the spatial design of cities and buildings to public policy. Advanced undergraduates admitted by consent of instructor. Ms. Hayden

283. History of the American Household and the American Home. Lecture, one and one-half hours; discussion, one and one-half hours. 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. The concerns of professional architects and planners will be discussed 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. This seminar will deal with 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. Livable Cities for Women, Men and Children. Lecture, one and one-half hours; discussion, one and one-half hours. 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 will 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

286. History of Specific Building Types. *See* "Architectural Theory, History and Criticism."

287. Ancient and Islamic Architecture in the Mediterranean area. *See* "Architectural Theory, History and Criticism."

288. Architectural History: Medieval Period *See* "Architectural Theory, History and Criticism."

Independent Study

199. Special Studies. (½ to 2 courses) Prerequisite: consent of instructor. Independent research or investigation on a selected topic to be arranged with a faculty member. May be repeated for credit.

494. Supervised Independent Teaching. (½ to 2 courses) Supervised individual teaching experience. This course is graded S/U and may be repeated for credit.

496. Special Projects in Architecture. (½ to 2 courses) Prerequisite: consent of instructor. Projects initiated by either individual students or student teams, and directed by a member of the faculty. May be repeated for credit.

496F. Field Projects. (½ to 2 courses) To be graded S/U only; may be repeated for credit.

497. Special Projects in Urban Design. (½ to 2 courses) Prerequisite: consent of instructor. Projects initiated by either individual students or student teams, and directed by a member of the faculty. May be repeated for credit.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596A. Directed Individual Research and Study in Architecture and Urban Design. (½ to 2 courses) May be repeated for credit.

596P. Research in Planning. (½ to 2 courses) May be repeated for credit.

597P. Preparation for the Comprehensive Examination for the Master's Degree or Qualifying Examinations for the Ph.D. Degree. (½ to 2 courses) May be repeated for credit. Graded S/U.

598A. Preparation in Architecture/Urban Design for the Master's Thesis. (½ to 2 courses) Prerequisite: consent of instructor. May be repeated for credit.

598P. Preparation for Master's Thesis in Urban Planning. (½ to 2 courses) May be repeated for credit. Graded S/U.

599P. Doctoral Dissertation Research in Planning. (½ to 2 courses) May be repeated for credit. Graded S/U.

Interprogram Courses

187. Planning and Designing our Cities. An introduction to urban planning and urban design with an emphasis on methods and tools used in practice. Starting with an overview of the planning field, the course addresses itself to physical planning for redevelopment, for projects in expanding areas and for new towns. Lectures (with illustrated examples), field visits and presentation of the students' own projects create the framework for expanding our understanding of the urban planning and design process. Mr. Kamnitzer

190. The Human Environment: An Introduction to Architecture and Urban Planning. This course aims to introduce students to 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 students are exposed to 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 the issues involved in relating the human to the natural environment. The students are encouraged to comprehend the major urban issues both as citizens and as potential technical experts. Mr. Perloff

226A. Computer Applications in Architecture and Urban Planning (Introductory). Lecture, three hours. Introduction to electronic computers and the FORTRAN IV programming language, with emphasis on writing and executing programs specifically applicable to architecture, urban design and planning. The course will also provide an introduction to computer mapping techniques. No prerequisite or prior knowledge of computing is required. Ms. Liggett

226B. Computer Applications in Architecture and Urban Planning (Advanced). Lecture, three hours. Prerequisite: course 226A or equivalent. Seminar on advanced computing techniques and modeling as applied to architecture and urban planning. This course will introduce the PL1 programming language but will assume students have previous computing experience in another language. Ms. Liggett and the Staff

490. Urban Innovations Group Workshop. (1 to 2 courses) 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.

Art, Design, and Art History

(Office, 1300 Dickson Art Center)

Samuel Amato, B.F.A., *Professor of Art.*
Albert Boime, Ph.D., *Professor of Art History.*
William J. Brice, *Professor of Art.*
Raymond B. Brown, M.A., *Professor of Art (Chair of the Department).*
Jack B. Carter, M.A., *Professor of Art.*
Susan B. Downey, Ph.D., *Professor of Art History.*
Elliot J. Elgart, M.F.A., *Professor of Art.*
Robert F. Heinecken, M.A., *Professor of Art.*
Thomas Jennings, M.A., *Professor of Art.*
J. Bernard Kester, M.A., *Professor of Art.*
Velizar Mihich (Vasa), *Professor of Art.*
Lee Mullican, *Professor of Art.*
John A. Neuhart, *Professor of Art.*
Gordon M. Nunes, M.A., *Professor of Art.*
Carlo Pedretti, M.A., *Professor of Art History.*
Jan Stussy, M.F.A., *Professor of Art.*
Otto-Karl Werckmeister, Ph.D., *Professor of Art History.*
Laura F. Andreson, M.A., *Emeritus Professor of Art.*
Alexander Badawy, B.Arch., D.I.A., Ph.D., *Emeritus Professor of Art History.*
Karl M. Birkmeyer, Ph.D., *Emeritus Professor of Art History.*
E. Maurice Bloch, Ph.D., *Emeritus Professor of Art History.*
Archine V. Fetty, M. A., *Emeritus Professor of Art.*
Lester D. Longman, Ph.D., L.H.D., D.F.A., *Emeritus Professor of Art History.*
Katharina Otto-Dorn, Ph.D., *Emeritus Professor of Art History.*
Josephine P. Reps, *Emeritus Professor of Art.*
Frederick S. Wight, M.A., *Emeritus Professor of Art History.*
Mitsuru Kataoka, M.A., *Associate Professor of Art.*
Cecelia F. Klein, Ph.D., *Associate Professor of Art History.*
David M. Kunzle, Ph.D., *Associate Professor of Art History.*
Donald F. McCallum, Ph.D., *Associate Professor of Art History.*
Arnold Rubin, Ph.D., *Associate Professor of Art History.*
Adrian Saxe, B.F.E., *Associate Professor of Art.*
Nathan Shapira, Dottore in Architettura, *Associate Professor of Art.*
James R. Valerio, M.F.A., *Associate Professor of Art.*
James W. Bassler, M.A., *Assistant Professor of Art.*
Cornelia K. Breitenbach, M.F.A., *Assistant Professor of Art.*
William C. Brown, M.A., *Assistant Professor of Art.*
Ioli Kalavrezou-Maxeiner, Ph.D., *Assistant Professor of Art History.*
Deborah Klimburg-Salter, Ph.D., *Assistant Professor of Art History.*
Richard Marquis, M.A., *Assistant Professor of Art.*
Alice M. McCloskey, M.A., *Assistant Professor of Art.*
Martin J. Powers, Ph.D., *Assistant Professor of Art History.*
Madeleine Sunkees, B.Ed., *Emeritus Assistant Professor of Art, Emeritus.*

•

Donald Roberts, *Lecturer in Art.*
Jean Weisz, M.A., *Lecturer in Art History.*

The Master of Arts Degree

Design

Admission requirements. An acceptable portfolio is required, in the form of slides (maximum 25). Acceptance is by a majority vote of

the Design faculty. Formal Design Area faculty review of graduate applicant portfolios takes place toward the end of the Fall and Winter quarters.

For applicants who have a B.A. degree or equivalent, it is possible to be admitted on an Unconditional Basis, or on a Provisional Basis. Further explanation follows:

Advising. *Unconditional Admission:* Immediately upon an applicant's acceptance on an Unconditional Basis, an Initial Advisory Committee will be formed by the Chair of the Design Area and/or the Graduate Affairs Assistant of the Department. This committee will be composed of the student's two sponsors, one of whom will serve as the student's adviser, and at least one other member of the Design faculty. It is the adviser's responsibility, along with other members of the committee, to observe the student's progress and give advice until the student is considered ready to select his/her Graduate Guidance Committee for the graduate degree. Members of this initial Advisory Committee may or may not eventually become members of the student's Graduate Guidance Committee.

Provisional Admission: Provisional Admission for two quarters only is recommended when an applicant shows great promise, but the grade point average is below 3.0; preparation for the graduate area of specialization is insufficient as demonstrated in the portfolio; undergraduate preparation is inadequate as indicated in transcripts.

Immediately upon acceptance on a Provisional basis, an Advisory Committee for Provisional Students will be formed by the Chair of the Design Area and/or the Graduate Affairs Assistant of the Department. This committee will be composed of the student's adviser, and at least one other member of the Design faculty. It is the adviser's responsibility, along with other members of the committee, to consider the inadequacy which prompted Provisional Admission and outline a program of study that will strengthen the student sufficiently to allow him/her to continue on an Unconditional basis.

No later than the final week of instruction of the second quarter of Provisional Admission, the Advisory Committee will meet with the student to determine whether Provisional status is to be removed or the student dismissed. The recommendation of the committee will stand as the final decision in each case.

No later than the end of the fourth quarter of fulltime residency, the Graduate Guidance Committee shall be established. The student, in consultation with his/her adviser, is responsible for selection of committee members as specified in the following:

1) Committee Chair: the student's adviser, and a member of the Academic Senate, unless petitioned otherwise. 2) Second member: a faculty member from the Design area. 3) Third member: a person of academic rank or equivalent professional standing from outside the Department of Art, Design, and Art History (possibly outside the University).

The Advisory Committee and/or the Graduate Guidance Committee is charged with the responsibility of reviewing the student's progress at least once every quarter that the student is enrolled. A record of these reviews shall be placed in the student's file, open for his/her inspection.

Major Fields or Subdisciplines. Communication imagery, image transfer, electronic imagery, costume, ceramics, glass, fiber structures, textiles, landscape design, industrial design or exhibition design.

Course Requirements. A minimum of 36 quarter units in the Department of Art (or non-departmental courses with the Graduate Adviser's approval) in courses numbered 100 to 299 (and possibly 596), with a "B" average, including a minimum of 20 quarter units of design numbered above 200, of which at least 8 units must be the Design Seminar, Art 290 A, B, C, and at least 8 units devoted to a comprehensive project in the student's area of study. In addition, 8 quarter units of art history; or if the student has a B.A. or B.F.A. in Art which includes a background in the history of art, he/she may in conference with his/her faculty adviser, substitute 8 units in other courses that are germane to his/her graduate pursuit.

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, other visual material, which may include a written statement as determined by the Graduate Guidance Committee. This examination is conducted by the student's Graduate Guidance Committee.

Time to Degree. From graduate admission to award of the degree: normally six quarters.

500 Series Course Limitations. No more than two 596 courses (8 units) may apply towards the 36 required for the degree.

Disqualification and Appeal of Disqualification. If, by virtue of a review by the student's Graduate Guidance Committee, the student's work is not deemed to be of graduate quality/quantity, the Guidance Committee may recommend termination.

Other Relevant Information. The M.A. degree reflects mature creative achievement demonstrated within the various disciplines of design, identifying the degree recipient as having developed an advanced level of original work.

Art

Admission Requirements. *Regular admission* requires a B.A. or equivalent and faculty approval following the annual review of applicants' creative work in one of two kinds of presentations, 1. slides only, or 2. the original creative works, both presentations limited to a maximum of 20, minimum of 10 works showing media emphasis and potential for advanced study.

Provisional admission may be granted for work with faculty sponsors for three quarters, pending reconsideration of regular admission.

The M.A. is not prerequisite to the M.F.A. Admission to the M.F.A. program is usual, with a possible decision deferred to conclude an M.A. only, or before the M.F.A. The unit requirements applied to concluding the M.A. will not apply to the M.F.A., with the exception of the accumulative Art History units.

The annual review of applicants' work is in February, for admission in the next Fall Quarter, together with reviews of scholarship and teaching assistantship applications. Students are admitted for Fall Quarter only.

Admitted graduates who do not enroll, drop out, or take a leave of absence must be reviewed for readmission at the next annual review, except by petition.

Advising. For general advising: Graduate Affairs Assistant. Faculty advisers are available for new students, by referral and mutual consent, usually related to media specialization. Continuing Graduate Reviews are held toward the end of each quarter, with the entire faculty in attendance. Results of these reviews are placed in the student's file, and available for inspection by students.

Major Fields or Subdisciplines. Drawing, Painting, Sculpture, Printmaking, Photography, Video, New Forms and Concepts. No limits to the variations, extent, or value of these designations is intended.

Course Requirements for the M.A. A minimum total of 36 quarter units in the Department of Art, Design, and Art History from 100 to 299, are required, with a B or better average.

Within those 36 units, a minimum of 20 quarter units in the 200 series must be taken in the field of specialization.

A minimum total of 36 quarter units must be taken in art history, theory and criticism, in undergraduate and graduate study. Subjects (by petition) related to the special interest of the student may be substituted.

Comprehensive Examination Plan. Each degree is granted upon the basis of the quality of the student's work as demonstrated in the exhibition which accompanies the final Comprehensive Examination. The number of units of credit attained is irrelevant to this judgment. By mutual consultation and consent of student and individual faculty, an Advisory and Examining Committee, with a chair, must be established not less than three quarters before the Comprehensive Examination. Committee members may not change in these three quarters except to provide for faculty absence.

The M.A. committee shall consist of a minimum of three members from the PSGA curriculum.

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.

Time to Degree. From graduate admission to award of the degree: six quarters.

500 Series Course Limitations. A maximum of two 596 courses (8 units) may be applied toward the 36 units required for the degree.

Disqualification. Following reviews, verbal and written notice may be given of probationary status, pending the next review. Unresolved difficulties may conclude in termination.

Appeals. Appeal may be made to the Vice Chair in Art, Design, and Art History.

Art History

Admission Requirements. A minimum grade point average of 3.25 overall and 3.50 in upper division art history courses is required. The Graduate Record Examination is required, although no cutoff 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 the applicant's interests in art history. In addition, the student must have completed six full courses in the history of art, distributed over at least four of the following seven categories such that three fall within categories a. through d., and three within categories e. through g.

a) Egypt, Ancient Near East, Classical

b) Medieval (Western European; Byzantine)

c) Renaissance, Baroque, Prints and Drawings

d) Modern European, Modern American, Prints and Drawings

e) Chinese, Japanese

f) African, Oceanic, Native North America, Pre-Columbian

g) Islamic, Indian

Applicants demonstrating exceptional promise who lack 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 of residence and will not count toward the 10 courses required for the degree. Instead of taking a course, the student may elect to substitute a competency examination in the deficient area.

Applicants are expected to possess some fluency in at least one of the two languages for which they will be responsible (*see* Foreign Language Requirement) and are encouraged to take either the ETS or the UCLA Art, Design, and Art History Department examination in one of those languages at the time of application.

Prospective students may contact the Graduate Affairs Assistant, Department of Art, Design, and Art History for brochures, etc. The Department has no special departmental application.

Advising. Address: Graduate Adviser, Department of Art, Design, and Art History. Personal advisers are selected as follows: By the end of the third quarter in residence, a student chooses his/her major and minor advisers; the choice is determined by the fields of study. Changes are made by petition to the Graduate Review Committee; the basis for change will normally be change in field. Internal grading and evaluation consists of comments made by professors about students' performance in seminars; these comments are put into students' files which are available to them. Overall assessment of a student's work is made by the personal adviser. The major adviser must be consulted at least once each quarter to review progress and plan the program. Records are not kept of these meetings. The student's major and minor advisers constitute the guidance committee.

Major Fields or Subdisciplines. Egyptian, Ancient Near East, Classical, Medieval (Western European; Byzantine), Renaissance, Baroque, Prints and Drawings, Modern European, Modern American, Chinese, Japanese, African, Oceanic, Native North American, Pre-Columbian, Islamic, Indian.

Foreign Language Requirement. A reading knowledge of French and German is required of all students except those intending to major in Asian (i.e., Chinese, Japanese, Indian) or Pre-Columbian art history. Students majoring in Chinese or Japanese art history (who are not native speakers of the relevant language) must substitute either Chinese or Japanese respectively for either French or German. Those majoring in Indian art history must substitute, for either French or German, an appropriate classical research language of India. 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 art history majors, all students must demonstrate reading fluency in both foreign languages in any of the following ways: a) by passing the Art, Design, and Art History Department language examination, b) by passing the ETS examination with a minimum score of 600, c) by enrolling in and completing with a minimum grade of B, the UCLA courses French 5, German 5, and/or Spanish 25. One of these language requirements must be satisfied by the end of the second quarter of residence and the other by the end of the fourth. Students majoring in an Asian art history area must satisfy their European language requirement by the end of the second quarter of residence and may do so in any of the three ways listed above. Their Asian 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 student's major adviser. A student who has passed a required foreign language examination at another institution should consult the Chair of the Art Department Language Committee to determine if his/her previous examination is acceptable.

Course Requirements. The M.A. degree requires the completion of a major and two minors. Students intending to major in areas included in categories e. through g. (*see* Admission Requirements) will choose at least one minor from categories a. through d. Conversely, students intending to major in areas included in categories a. through d. will choose at least one minor from areas included in categories e. through g. Students 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 (i.e., in the 200 and 500 series). At least four of these, including course 201 (Historiography of Art), must be in the 200 series, and no more than two may be "directed studies" (596) projects. All students must take: (1) course 201 (Historiography of Art), (2) four courses in the major and (3) two courses in each minor.

Thesis Plan. The thesis committee is established upon completion of all course requirements. The thesis committee consists of the student's major adviser and two other UCLA faculty members, one of whom must be a member of the art history faculty. Normally, the student's two minor advisers serve in this capacity. At the same time, the student selects a thesis topic in his/her major field. This 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.

Time to Degree. From graduate admission to award of the degree: two to three years.

500 Series Course Limitations. *See* Course Requirements above.

Disqualification and Appeal of Disqualification. If the thesis is rejected by one member of the student's committee, it may, at the request of the major adviser, be submitted to the Graduate Review Committee for final judgment; otherwise, the student's candidacy is terminated.

The Master of Fine Arts Degree

Design

Admission Requirements. Admission requirements and procedures are essentially the same as for the M.A. in Design with the following difference in emphasis:

The M.F.A. degree is the highest academic degree awarded in 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 of applicants seeking admission directly to the M.F.A. program in comparison to M.A. applicants. M.F.A. applicants are usually not admitted on a provisional basis when there are deficiencies in the applicant's portfolio, preparation or academic record.

Course Requirements. A *minimum* of 72 quarter units of Design numbered 100 to 299, of which at least 8 units must be the Design seminar (Art 290 A, B, C) and of which at least 12 units must be devoted to a comprehensive project in the student's area of study; a minimum of 40 quarter units of art history in undergraduate and graduate study. The student, with the approval of his/her faculty adviser, may substitute a maximum of 12 units in other courses that are germane to his/her graduate pursuits.

Comprehensive Examination Plan. The Comprehensive Examination (offered each quarter) consists of an oral examination and 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, other visual material, and which may include a written statement as determined by the Graduate Guidance Committee. This examination is conducted by the student's Graduate Guidance Committee.

Time to Degree. From graduate admission to award of the degree: *normally nine quarters.*

500 Series Course Limitations. No more than three 596 courses shall apply towards the 72 units required for the M.F.A. degree.

Disqualification and Appeal of Disqualification. If, by virtue of a review by the student's Graduate Guidance Committee, the student's work is not deemed to be of graduate quality/quantity, the Guidance Committee may recommend termination.

Art

Admission Requirements. *Regular admission* requires a B.A. or eqivalent, and, faculty approval following the annual review of applicants' creative work in one of two kinds of presentations, 1. slides only, or 2. the original creative works, both presentations limited to a maximum of 20, minimum of 10 works showing media emphasis and potential for advanced study.

Provisional admission may be granted for work with faculty sponsors for three quarters, pending reconsideration of regular admission.

The M.A. is not prerequisite to the M.F.A. Admission to the M.F.A. program is usual, with a possible decison deferred to conclude an M.A. only, or, before the M.F.A. The unit requirements applied to concluding the M.A. will not apply to the M.F.A., with the exception of the accumulative Art History units.

The annual review of applicants' work is in February, for admission in the next Fall Quarter, together with reviews of scholarship and teaching assistantship applications. Students are admitted for the Fall quarter only.

Admitted graduates who do not enroll, drop out, or take a leave of absence must be reviewed for readmission at the next annual review, except by petition.

Students may contact the Graduate Affairs Assistant, to obtain departmental brochures.

Advising. For general advising: Graduate Affairs Assistant. Faculty advisers are available for new students, by referral and mutual consent, usually related to media specialization. Continuing Graduate Reviews are held toward the end of each quarter, with the entire faculty in attendance. Results of these reviews are placed in the student's file, and are available for inspection by students.

Major Fields or Subdisciplines. Drawing, Painting, Sculpture, Printmaking, Photography, Video, New Forms and Concepts. No limits to the variations, extent or value of these designations is intended.

Course Requirements. A minimum total of 72 quarter units in the Department of Art, from 100 to 299, with a B or better average.

Within those 72 units, a minimum of 44 quarter units in the field of specialization, including a minimum of 40 quarter units in the 200 series.

A minimum of 40 quarter units in art history, theory and criticism in undergraduate and graduate study. Subjects (by petition) related to the special interest of the student may be substituted.

Comprehensive Examination Plan. Each degree is granted upon the basis of the quality of the student's work as demonstrated in the exhibition which accompanies the Final Comprehensive Examination. The number of units of credit attained is irrelevant to this judgment.

By mutual consultation and consent of student and individual faculty, an Advisory and Examining Committee, with a chair, must be established not less than three quarters before the Comprehensive Examination. Committee members may not change in these three quarters except to provide for faculty absence. 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.

The M.F.A. committee shall consist of four Art faculty members. One additional member from a curriculum outside Art may be selected. The outside member may be a faculty member from a department other than Art, Design, and Art History or from another curriculum in the Department.

Time to Degree. From graduate admission to award of the degree: nine quarters.

500 Series Course Limitations. A maximum of three 596 courses (12 units) may be applied toward the 72 units required for the degree.

Disqualification and Appeal of Disqualification. Following reviews, verbal and written notice may be given of probationary status, pending the next review. Unresolved difficulties may conclude in termination.

Appeals. Appeals may be made to the Vice Chair in Art, Design, and Art History.

The Ph.D. Degree

Art History

Admission Requirements. 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 show evidence of having 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 M.A. course requirements, art history). Deficiencies must be made up during the first two quarters of residence and will not count toward the eight courses required for the Ph.D.

The student's application to the Department must include, in addition to official transcripts submitted to the Admissions Office and GRE scores, all of the following:

a) A standard, approximately 400-word, statement of purpose.

b) A copy of the applicant's 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.

c) Three or more letters of recommendation from individuals familiar with the applicant's scholarly work, of which one must be a detailed letter of assessment and endorsement from the individual who served as the applicant's major adviser for the M.A.

d) A written statement from the applicant's intended major adviser at the Ph.D. level of his/her willingness to supervise the applicant's Ph.D. work.

e) 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 Affairs Assistant.

A reading knowledge of French and German is requisite for admission at the Ph.D. level for those majoring in all areas except Asian and Pre-Columbian. Students may demonstrate this knowledge by submitting proof of an ETS score of 600 or better, taking and passing the relevant UCLA Art, Design, and Art History Department language examination(s), or submit-

ting proof of completion of UCLA courses German 5 and/or French 5 with a grade of B or better.

Students intending to major in an Asian art history area must demonstrate, by the means outlined above, reading fluency in either French or German. In addition, they must present proof of completion — with a grade of B or better — of six consecutive quarter courses (or their equivalent) in an appropriate Asian language. Determination of the appropriate language and acceptable equivalencies should be worked out in advance with the applicant's 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 case of the latter, UCLA's course, Spanish 25, passed with a grade of B or better, fulfills the requirement.

A student who has passed a required foreign language at another institution should consult the chair of the Art, Design, and Art History Department Language Committee to determine if his/her previous examination is acceptable.

Prospective students may contact the Graduate Affairs Assistant, Department of Art, Design, and Art History for brochures and other information. The Department has no special departmental application.

Advising. At the time of application to the Ph.D. program, the student selects a major field of study; by the end of the second quarter of residence, he/she selects, in addition, two minors. The faculty members responsible for these fields serve as the student's minor advisers. Each adviser is responsible for the student's course of study and completion of requirements within his/her own field. In addition, the major adviser must be consulted regarding the student's overall course of study at least once each quarter.

Major Fields or Subdisciplines.
See under M.A. requirements.

Foreign Language Requirement. Students in the Ph.D. program are normally required to demonstrate, no later than the time of their Oral Qualifying Examination, reading fluency in one or more additional foreign languages. Among those fields requiring reading fluency in one or more additional foreign languages 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 student's major adviser.

Course Requirements. The Ph.D. requires demonstrated competence in a major and two minors. If the student chooses two art history minors, one must be unrelated to his/her major. That is, students intending to major in areas included in categories e. though g. (see Major Fields or Subdisciplines) will choose at least one minor from categories a. through d. Conversely, students intending to major in areas included in categories a. through d. will choose at least one minor from areas included in categories e. through g.

As an option, one minor may be extradepartmental but must be related to the major field in art history. Extradepartmental minors may be interdisciplinary in scope, but one of the participating extradepartmental faculty must agree to serve as the adviser for that minor.

All students must have taken a minimum of four courses (at least one a graduate course) in one or more unrelated areas during the course of the M.A. and/or Ph.D. Credit may be given for coursework at another institution.

In all, a minimum total 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, students must take at least three, and may take up to five, extradepartmental upper division and/or graduate courses, which have to be approved by their major adviser.

Written and Oral Qualifying Examinations. Upon completion of coursework and language study, the student takes the Ph.D. Written Comprehensive Examination. This examination includes a 6-hour examination in the major field of study, designed and graded by the student's major adviser, and a 3-hour examination, designed and graded by the appropriate minor adviser, in each of the two minor fields. The purpose of the examination is to test the student's breadth and depth of knowledge in his/her three areas of specialization. If a student fails to pass the examination, or any part thereof, any failed portion may be repeated during the subsequent quarter of residence. No further repetition will be allowed.

Upon passing the Written Comprehensive Examination, the student, in consultation with his/her major adviser, selects a dissertation topic; the members of his/her doctoral committee are then nominated, and the committee is appointed by the Dean of the Graduate Division.

After having conducted considerable exploratory research and preparation for his/her dissertation, the student submits to the committee a dissertation proposal. The student then meets with the members of his/her committee to be orally examined on the validity and feasibility of the proposed topic and on the methods employed, as well as on the soundness of his/her tentative conclusions. The committee then reports the examination "passed" or "not passed." Assuming there is no more than one "not passed" vote, the student may initiate the procedure to become advanced to candidacy. If the student fails the examination, it may be repeated once. The doctoral committee may decide, by unanimous agreement, to waive the Final Oral Examination (not normally required) and selects a minimum of three members — two from art history and one from outside the Department — who will read, approve, and certify the final draft of the dissertation.

Final Oral Examination Following Completion of the Dissertation. If a Final Oral Examination is required by the student's committee (see above), it is held after the final draft of the dissertation has been circulated among the committee members. All members of the committee attend and vote. A student may pass with one negative vote so long as that vote is not that of his/her major adviser. In case of failure, the doctoral committee decides, by unanimous agreement, whether or not the candidate may be reexamined.

Time to Degree. From graduate admission to award of the degree *including time spent on the M.A. degree:*

For students majoring in Asian, Classical and Medieval: 21 quarters.

For all others: 18 quarters.

Disqualification. The Ph.D. Written Comprehensive Examination may be repeated once. If failed the second time, the student is terminated. Oral examination is considered "not passed" with more than one negative vote. Upon majority vote of the committee, the examination may be repeated once. If failed a second time, the student is terminated. The Final Oral Examination may be passed with one negative vote (provided this vote is not that of the major adviser). The candidate may be reexamined upon unanimous agreement of the committee.

Appeals. Appeals are made to the Graduate Review Committee via the Graduate Adviser.

Graduate Courses

Prerequisite for all courses: consent of the instructor. All courses may be repeated for credit upon recommendation of adviser. Not open to undergraduate students. See College of Fine Arts, Unit Requirement. Course 201 through 265; exact topics of both graduate lecture courses and seminars vary.

201. Historiography of Art History. Seminar, two hours. A critical study of the various approaches to art history through the centuries. The course may concentrate on one time period, on the work of one or more authors, or on a particular methodology.

202. Methodology of Art History. (½ to 2 courses) 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. Seminar, two hours. Course will focus on various aspects of museum activities: concepts and historical evolution of art museums and collecting; methoddlogy of exhibitions; problems involved in acquisition and evaluation of works of art.

204. Restoration, Preservation and Conservation. Seminar, two hours. Course may not be repeated.

205. Studies in Prints. 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. Seminar, two hours. Critical studies in the history and connoisseurship of draughtsmanship in the western world. Individual studies emphasize professional presentation. Group studies may culminate in exhibitions sponsored by the Grunwald Center for the Graphic Arts.

210. Egyptian Art. Seminar, two hours. Prerequisites: course 101A, 101B, 101C, 102. A course designed to cover 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 ten minutes. There will be some lectures.

213. Problems in Islamic Art. Seminar, two hours. The art and architecture of the Islamic world from Spain to Iran from the 7th to the 17th century. The seminar will deal with either monuments or theoretical problems relating to Islamic culture and artistic production.

220. The Arts of Africa, Oceania and Pre-Columbian America. Seminar, two hours. Typically dealing with some aspect of art in Africa, Oceania, or Native America, or cross-cultural and comparative topics. Interdisciplinary approaches and historical, cultural, social and economic issues are emphasized. Twenty minute oral presentation and 12-15 page paper are required. Ms. Klein, Mr. Rubin

221. Topics in Classical Art. 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. Seminar, two hours. Studies in Greco-Roman art and archaeology. Studies of specific periods, sites, or artistic media. Ms. Downey

225. Medieval Art. Seminar, two hours. Studies in selected topics in Byzantine and European Medieval art. Ms. Kalavrezou-Maxeiner, Mr. Werckmeister

226A-226B. Medieval Art and Architecture. Studies in selected topics in Byzantine and European Medieval art. Seminar extends over two consecutive quarters. Ms. Kalavrezou-Maxeiner Mr. Werckmeister

229. Renaissance and Baroque Paleography. Seminar. Prerequisites: Italian and working knowledge of Latin. A workshop approach to documents pertaining to artistic commissions from the 15th to the 17th centuries in Italy to study various aspects of handwriting in official and private deeds, correspondence, treatises, and inscriptions. Mr. Pedretti

230. Italian Renaissance Art. Seminar, two hours. A study of various aspects of Leonardo's theoretical approach to art in terms of sources and the impact on followers. Italian required. Mr. Pedretti, Ms. Weisz

231. Leonardo and Renaissance Theory of Art. Seminar, two hours. A study of various aspects of Leonardo's theoretical approach to art in terms of sources and impact on followers. Italian required. Mr. Pedretti

235. Northern Renaissance Art. Seminar, two hours. The seminar will focus on a selected topic (e.g., a particular artist, trend, or problem). Research papers and oral reports required. German required.

240. Baroque Art. Seminar, two hours. The seminar will focus 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 1700-1900. Lecture, two to three hours.

245. European Art from 1700 to 1900. Seminar, two hours.

246. Art and Architecture of Georgian England. Seminar, two hours. Ms. Bennett

253. Modern Art. Seminar, two hours. Changing topics in Modern Art (including illustration and other popular forms) which reflect the interests of particular faculty members. Political and economic factors affecting the arts of France and Germany at various times are emphasized. Mr. Bolme, Mr. Kunzle, Mr. Werckmeister

255. American Art. Seminar, two hours. Advanced studies in the evolution of American art, chiefly architecture and painting from the eighteenth to the early twentieth century. Criticism and evaluation of scholarship in the field with innovative research directed toward professional presentation.

259. Topics in Asian Art. Lecture, two to three hours. Lectures concerned with the secular and religious art of India, China, Japan and adjacent regions. Topics dealt with will vary from term to term. Ms. Klimburg-Salter, Mr. McCallum, Mr. Powers

260. Asian Art. Seminar, two hours. Advanced studies in the secular and religious artistic traditions of India, China, Japan and adjacent regions. Topics and geographical areas treated will vary each term. Ms. Klimburg-Salter, Mr. McCallum, Mr. Powers

265. Field Work in Archaeology. (½ to 2 courses) Participation in archaeological excavations or other archaeological research under supervision of the staff.

271. Graduate Painting. (½ to 2 courses) Hours to be arranged. Tutorial studies in traditional, new forms and concepts media as well as in our media specializations. Independent development and original research are fundamental objectives to this course.

272. Graduate Printmaking. (½ to 2 courses) Tutorial studies in traditional and experimental printmaking. Selected studies in intaglio, lithograph, woodcut, silkscreen, photo printmaking and mixed media. Mr. Brown

273. Graduate Sculpture. (½ to 2 courses) Tutorial with specific attention given to the ongoing nature, specificity and approach to the student's particular discipline. Individual studio visits and consultation.

274. Graduate Photography. (½ to 2 courses) A tutorial or tutorial/seminar course concerned with the particular artistic development of each student's personal photographic art work. 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 non-art. Art in society. Content, formal and esthetic issues. Language, perception, reference structures, media. Mr. Nunes

280. Communication Imagery. (½ to 2 courses) Laboratory, two to four hours. Exploration of graphic processes in visual systems. Design theory and procedures related to typography, letter form, photography and the graphic film as they communicate visually (i.e., poster, brochure, book, film and exhibition). Mr. Neuhart

281. Image Transfer (½ to 2 courses) 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. Mr. Jennings

282. Electronic Imagery. (½ to 2 courses) 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 is developed with video cameras, VTR, and electronic synthesizers experienced and viewed on television monitors or print forms; images are stored on videotapes for later analysis. Mr. Kataoka

283. Costume. (½ to 2 courses) 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. (½ to 2 courses) 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 is 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

285. Glass. (½ to 2 courses) Laboratory, two to four hours. Exploration and intensive investigation of processes and attitudes towards glass as a tool of personal expression and creative discipline. Mr. Marquis

287. Design and Structure. (½ to 2 courses) Laboratory, two to four hours. Emphasis on developing methods of critical evaluation . Work will be 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 Structures. (½ to 2 courses) 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. (½ to 2 courses) 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. Ms. Breitenbach

290A-290B-290C. Design Seminar: A Collaborative View. 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

291. Landscape Design. (½ to 2 courses) Laboratory, two to four hours. Articulation of landscape elements, including conservation and planning. Mr. Roberts

292. Shelter. (½ to 2 courses) Development of individual projects to investigate concepts of Shelter. Exploration of traditional and contemporary forms, methods, and materials. Mr. Shapira

293. Interior Space Design. (½ to 2 courses) The concept and practice of designing interior spaces. Evaluation of visual and functional needs for interior spaces, (ranging from personal to social spaces) two and three dimensional projects involving color, light, surface, materials, equipment, furniture, etc. Mr. Kester, Mr. Shapira

294. Industrial Design. (½ to 2 courses) 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. (½ to 2 courses) Laboratory, two to four hours. Interpretation and presentation of materials for exhibition. Student may elect to work with instructor and gallery staff on regularly scheduled productions or he may outline his own project and proceed by producing studies, renderings, schematics, or by fabricating models. Mr. Carter

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses) Prerequisite: consent of instructor. To be graded by letter grade.

597. Preparation for the Comprehensive Examination for the Master's Degree or the Qualifying Examination for the Ph.D. (½ to 2 courses) Prerequisite: consent of instructor. Graded S/U.

598. Research for and Preparation of the Master's Thesis. (½ to 2 courses) Prerequisite: consent of instructor. Graded S/U.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 2 courses) Prerequisite: consent of instructor. Graded S/U.

Related Courses in Another Department

Classics 251A. Seminar in Classical Archaeology: The Aegean Bronze Age.

251B. Seminar in Classical Archaeology: Graeco-Roman Architecture.

251C. Seminar in Classical Archaeology: Graeco-Roman Sculpture.

251D. Seminar in Classical Archaeology: Graeco-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.

Asian American Studies

(Interdepartmental)

(Office, 3232 Campbell Hall)

Hans Baerwald, Ph.D., *Professor of Political Science.*
David Farquhar, Ph.D., *Associate Professor of History.*
Patrick Ford, Ph.D., *Professor of English.*
John Hawkins, Ph.D., *Associate Professor of Education.*
Lucie C. Hirata, Ph.D., *Associate Professor of Sociology (Chair).*
Claudia Mitchell-Kernan, Ph.D., *Associate Professor of Anthropology.*
Stanley Sue, Ph.D., *Professor of Psychology.*

The Master of Arts Degree

Admission Requirements. In addition to the University's minimum requirements, applicants are expected to present evidence of their previous interest in Asian American Studies. The interest may be demonstrated by previous courses taken at the undergraduate level, 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 program as a part of their application. Three letters of recommendation are also required.

Further information may be obtained by writing to the Graduate Adviser, Asian American Studies Center, 3232 Campbell Hall, UCLA, Los Angeles, California 90024, or by calling (213) 825-2974.

Advising. One of the criteria for admission is that a UCLA faculty member be willing to supervise the student's work. Thus, the student's academic adviser is assigned at the time the decision to admit is made. If a change in academic adviser should become necessary due to a change in major field or for any other reason, the change will be effected after discussion with the student, the academic adviser and the Chair of the M.A. Committee.

Students are expected to meet quarterly with their academic advisers, usually at the beginning, to review their progress and to have their class program approved.

At the beginning of the second year in residence, students are expected to recommend a 3-person guidance committee for review and approval by the Dean of Graduate Division. This committee, which is usually chaired by the student's academic adviser, is responsible for supervising, reviewing, and finally approving the M.A. thesis. The committee also conducts an examination of the student on the topic of the thesis.

Major Fields. The Asian American Studies program is interdepartmental. Thus, its major fields are determined by the participating faculty from the various departments. Recruitment of new faculty is a continuing effort, but supporting faculty in history, sociology, anthropology, education, psychology and theater arts participate at present.

Research Tool Requirement. The Research Tool Requirement may be satisfied by one of two options:

(a) Asian Language: Students must present a minimum of two full years of study in an Asian language at University level or its equivalent. This requirement may be fulfilled prior to entering the program, but all students choosing this option must pass a proficiency examination administered by the Asian American Studies Center and the Faculty Guidance Committee.

(b) Research Methods: Students must take three upper division or graduate courses in research methods, e.g., statistics, computer science, field and observational techniques, experimental techniques, archival methods. The specific courses must be approved by the Faculty Guidance Committee.

The option must be justified by the student in a written statement. The rationale must include specification of the courses chosen 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 level courses, including AAS 200AB, Critical Issues in Asian American Studies. These are the program's only required courses. Three of the graduate courses must be selected from the following:

History 201H — Topics in History

Sociology 261 — Ethnic Minorities

Anthropology 231 — Asian Americans: Personality and Identity

Education 253G — The Asian American and Education

Thesis Plan. The thesis committee is synonymous with the guidance committee. It is normally constituted at the beginning of the second year of residence at which time the student is expected to submit a plan for approval.

After the approval of the thesis, the committee will conduct an oral examination of the student on its subject.

Time to Degree. It is estimated that six quarters in residence are required from time of admission to award of degree. This estimate presumes there are no deficiencies or non-related courses required such as the English 33 series for foreign students.

500 Series Course Limitation. The program allows two courses in the 500 series to be applied toward the 11-course requirement. However, only one of the two may be applied toward the requirement of the seven graduate courses. Since the program is interdepartmental, students enroll in 500 series through departments and must comply with departmental policy as to grading and units.

Disqualification. Termination of graduate status may be recommended by the academic adviser for failure to maintain specified required progress toward the degree, failure of the oral examination, or failure to submit an acceptable thesis a second time.

Appeals. Appeal may be made to the full interdepartmental committee.

Interdisciplinary Courses

Lower Division

Oriental Languages 3AB. Cantonese.

Upper Division

Asian American Studies 100A-100B. Introduction to Asian American Studies

Asian American Studies 103. Asian Americans and the Law

Asian American Studies 197. Topics in Asian American Studies

Library and Information Science 111D. Ethnic Bibliography: Asian American History and Culture.

Theater Arts 110B. Problems and Issues in Broadcast Media.

Graduate Courses

200A-200B. Critical Issues in Asian American Studies. (2 courses) Prerequisite: Graduate Standing. Consent of instructor. A two-quarter interdisciplinary seminar which attempts to (1) review systematically and critically the literature on Asian Americans, (2) identify gaps of knowledge and controversial issues in the field, and (3) develop plans of research and investigation that focus on these issues. Ms. Hirata

297. Topics in Asian American Studies.

596. Directed Individual Study or Research (½ to 2 courses). To be arranged. Prerequisite: consent of instructor.

598. Research for and Preparation of the Master's Thesis. (½ to 2 courses) Prerequisite: consent of instructor. Preparation of research data and writing of master's thesis. Graded S/U.

The following courses pertaining to Asian American Studies are offered by the departments listed. With the approval of the committee, other related courses may be included in a student's program.

Anthropology 103A-103B-103C. Peoples of Asia.

163. Women in Culture and Society.

M164. The Afro-American Experience in the United States.

166. Comparative Minority Relations.

167. Urban Anthropology.

172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest.

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 218A-218B. Urban Structure Analysis and Modeling.
251. Planning for Multiple Publics.
255. Urban Morphology: Definitions and Consequences.
History 153. The United States and the Philippines.
154A-154B. United States Urban History.
155A-155B. American and European Working Class Movements.
159A-159B. History of the Chicano Peoples.
160. The Immigrant in America.
161. Asians in American History.
163. History of California.
183. Modern China, 1840-1920.
187C. Modern Japanese History, 1868-Present.
200H. Advanced Historiography: United States.
201H. Topics in History: United States.
245. Colloquium in U.S. History.
252A-252B. Seminar in Recent U.S. 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.
260A-260B. Seminar in Native American History.
261A-261B. Seminar in Afro-American History.
262A-262B. Seminar in Chicano History.
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.
Political Science 135. International Relations of China.
136. International Relations of Japan.
147. Minority Group Politics.
159. Chinese Government and Politics.
160. Japanese Government and Politics.
250C. Chinese and East Asian Studies.
250D. Japanese and Western Pacific Studies.
Psychology 175. Community Psychology.
176. Experimental Community Psychology.
225. Seminar: Critical Problems in Social Psychology.
M228. Seminar in Political Psychology.
229A. Issues in the Social Development of the Minority Child.
Sociology 124. Ethnic and Status Groups.
125. Urban Sociology.
129. White Racism.
134. Comparative Social Institutions of East Asia.
155. Intergroup Conflict and Prejudice.
234. Sociology of Community Organization.
238A-238B. Field Work in Minority Communities.
259. Social Structure and Economic Change: Historical and Comparative Perspectives.
260. Industry 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.

Astronomy

(Office, 8979 Mathematical Science Building)

George O. Abell, Ph.D., *Professor of Astronomy.*
Lawrence H. Aller, Ph.D., *Professor of Astronomy.*
Ferdinand Coroniti, Ph.D., *Professor of Physics and Astronomy.*
Harland W. Epps, Ph.D., *Professor of Astronomy.*
Holland C. Ford, Ph.D., *Professor of Astronomy.*
Michael A. Jura, Ph.D., *Professor of Astronomy.*
Miroslav Plavec, Ph.D., *Professor of Astronomy.*
Roger K. Ulrich, Ph.D., *Professor of Astronomy (Chair of the Department).*
Edward L. Wright, *Professor of Astronomy.*
Daniel M. Popper, Ph.D., *Emeritus Professor of Astronomy.*
Steven A. Grandi, Ph.D., *Assistant Professor of Astronomy.*

•

Robert P. Kraft, Ph.D., *Director of Lick Observatory.*

Admission Requirements. The basic requirement for admission to the Astronomy program for the M.S., M.A.T., or the Ph.D. degree 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 Aptitude Test and Advanced Test in Physics. For further information, prospective students should contact the Graduate Adviser, Dr. M. Jura, Department of Astronomy, UCLA, Los Angeles, CA 90024.

Each entering student and each student who has not been admitted to candidacy for the Ph.D. should consult with the Graduate Adviser at the beginning of the Fall Quarter to determine a program for the year.

Disqualification. Every Winter Quarter, the entire faculty of the Department meets to evaluate the progress of the graduate students. Students are advised either informally or in writing on the faculty's evaluation of their progress. Students are subject to dismissal from the program if (1) they do not maintain high enough grades; (2) they fail their comprehensive or thesis exams; or (3) they do not maintain normal progress toward their degrees.

Appeals. Any student who is dismissed may within 30 days appeal the decision in writing to the faculty adviser who will then reconvene the entire faculty to reconsider the student's dismissal.

The 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 500 series may not apply toward the total course requirement or the graduate course requirement.

Comprehensive Examination Plan. To receive the master's degree, the student must obtain at least a B average in the Written Qualifying Examinations taken in the graduate program. The Written Qualifying Examinations are described in more detail below.

Time to Degree. A full-time student with no deficiencies at admission should normally be able to finish the master's degree in three quarters.

The Master of Arts in Teaching (M.A.T.) Degree

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, and at least three from upper division or graduate courses in astronomy, mathematics, physics or from the 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 500 series may not apply 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 should be taken including supervised teaching.

Comprehensive Examination Plan. This plan is the same as for the M.S. degree.

Time to Degree. A full-time student with no deficiencies at admission should normally be able to finish the M.A.T. degree in five quarters.

The Ph.D. Degree

Course Requirements. The required courses for the graduate degree are 200, 204A, 208A, 217A, 219A, 227A, 230A, at least four courses from 204B, 208B, 217B, 219B, 227B and 230B, and at least two courses (projects) from 204C, 208C, 217C, 219C, 227C and 230C. Each quarter in residence, students are required to take course 250.

Teaching Experience. Before receiving a Ph.D. degree, each student is required to spend at least three quarters as a teaching assistant at UCLA or have equivalent experience elsewhere.

Written Qualifying Examination. The Departmental Written Qualifying Examination is divided into sections, with one section for each course in the A or B series that the student takes to apply to the Ph.D. (or M.S.) requirement. In each case, the examination section covers the material that normally *should* be

covered in that course. This departmental examination is scheduled at the time the final examination for the course would normally be scheduled.

The Graduate Adviser will appoint a committee of three faculty members to administer each examination section; one of these three will be the instructor of the course. The instructor is primarily responsible for preparing the examination. However, the entire committee must certify that the examination section meets departmental standards. Moreover, the committee is responsible for certifying the grading of the examination section, and reporting the scores earned to the Graduate Adviser for the departmental records. These grades are reported as letter grades including plus and minus.

Students may repeat courses that they fail for credit, but may not repeat the departmental Comprehensive Examinations for departmental credit. New students should note this fact before commencing regular graduate work, especially if they are weak in undergraduate physics or astronomy.

For the Comprehensive Examinations, the following evaluation procedure will be followed. The A and B courses are worth a total of 20 points each while each C course (project) is worth 50 points so that there is a total of 300 possible points. The total number of points that a student receives depends upon his or her grade. The maximum number of points is assigned to an A+, and other grades receive only fractionally as many points, according to the scheme A (0.9), A− (0.8), B+ (0.7), B (0.6), B− (0.5), C+ (0.4), C (0.3), C− (0.2), F (0.0). For example, if a student receives a B+ in Astronomy 204A, he or she would receive 14 points. To be qualified to go on to the Ph.D. degree, each student must acquire at least 210 points total, at least 60 points on the C courses (the projects) and at least 120 points on the A and B courses together. After the Comprehensive Examinations are completed, the student must then fulfill the normal University requirements for a dissertation.

Projects. During the Fall Quarters of the second and third years, students are expected to complete a research project. Students should work closely with one of the staff both when the project subject is chosen and throughout the course of the work. It is the responsibility of the staff member to provide enough guidance to keep the projects moving and to adjust the goals in case unforeseen difficulties arise. The projects may be a continuation of work begun during the preceding Spring Quarter. However, this is not necessary. The goals of the project should be chosen in such a way as to reflect the amount of work completed in the Spring Quarter.

The evaluation of the projects will be based as much on the quality of the written report as on the quality of the research itself. An obvious consequence of this evaluation procedure is that students should spend at least two to three weeks on the preparation of the report. Thus, the active phase of the research should be terminated about three weeks before the end of the quarter regardless of whether or not it is "complete". A completed original research project is expected for the Ph.D. dissertation itself and not for these Fall Quarter projects. The project report should include statements of the project goals, the relationship of the project to broader issues in astronomy, the techniques chosen to attack the project problem and the reasons for this choice. Finally, the report should present whatever results were obtained prior to the final three weeks of the quarter. Since these results may be incomplete, the student should state what additional aspects of the project would be most important to complete, if time permitted. If the project is original and interesting, but incomplete, the student would be encouraged to complete it later, but the grade assigned will be based on the portion completed by the end of the Fall Quarter.

Final Oral Examination Following Completion of the Dissertation. Each student must pass a final examination upon completion of his or her dissertation.

Time to Degree. The normative time-to-degree is 18 quarters. A full-time student with no deficiencies is expected to finish in less than the normative time-to-degree.

Graduate Courses

Prerequisite to all graduate courses is consent of the instructor. Graduate courses 204 through 230 are offered in alternate years. With the exception of the introductory graduate course 200, the regular graduate courses consist of three quarters according to the following scheme: level A (Winter Quarter, 4 units); a basic survey course presenting the minimum knowledge in the field expected for all students who wish to obtain the Ph.D. degree, but who do not necessarily plan to specialize in the field covered by the course; Level B (Spring Quarter, 6 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. The introductory courses are given in the Winter Quarter so that (1) full use may be made of the favorable fall weather for observational projects, (2) new graduate students may be acquainted with the program and with the department in the introductory course 200, which is offered every year. Course 240 is equivalent to the B courses.

200. Introduction to Graduate Study of Astronomy. Prerequisite: to be taken by all newly entering graduate students. Surveys the various fields of astronomy and astrophysics, gives first acquaintance with working methods, and with the department. Basic astronomical nomenclature is surveyed, and the background in physics and mathematics is outlined as required in graduate courses. Mr. Grandi

201. Astrophysics of the Solar System. Prerequisite: Graduate Standing or permission 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. Aller, Mr. Ulrich

***[19]204A-204B-204C. Observational Astronomy. (1 course, 1½ courses, 2½ courses)** Prerequisite: consent of instructor. Spherical and positional astronomy; parallaxes, proper motions, and radial velocities of stars. Star catalogues and charts. Radiation measurements, photoelectric photometry, and other techniques. Spectroscopic observations. Eclipsing binaries. Includes laboratory work.
Mr. Epps, Mr. Ford

***[17]208A-208B-208C. The Interstellar Medium. (1 course, 1½ courses, 2½ courses)** 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. Aller, Mr. Grandi, Mr. Jura

***[17]217A-217B-217C. Stellar Photospheres. (1 course, 1½ courses, 2½ courses)** Prerequisite: consent of instructor. 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. Aller, Mr. Plavec, Mr. Ulrich

***[17]219A-219B-219C. Stellar Systems. (1 course, 1½ courses, 2½ courses)** 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. Abell, Mr. Ford

***[19]227A-227B-227C. Stellar Structure and Evolution. (1 course, 1½ courses, 2½ courses)** 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

230A-230B-230C. High Energy Astrophysics. (1 course, 1½ courses, 2½ courses) Prerequisite: consent of instructor. High energy radiation processes. Observational techniques of X- and Gamma-ray astronomy. Theory and observational results of X- 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, meterology, planetary and space physics). May be repeated for credit.

250. Seminar on Current Astronomical Research. (½ course) Prerequisite: Graduate students only (required of all). Current astronomical problems.

M266. Cosmic Ray Physics. (Same as Earth and Space Sciences M266.) Cosmic ray composition, origin, acceleration, propagation, interactions with interstellar matter, magnetic field and radiation field, role in interstellar heating, non-thermal galactic radio and galactic X- and gamma-radiation, interaction in the earth's atmosphere.

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 will vary from year to year. May be repeated for credit. Graded S/U.

Individual Study and Research

The following courses, 596A, 596L and 599, may be repeated by a student at the discretion of the Department.

596A. Directed Individual Studies. (1 to 2½ courses)

596L. Advanced Study and Research at the Lick Observatory. (1 to 3 courses) Intended for graduate students who require observational experience as well as those working upon observational problems for their thesis.

599. Doctoral Research and Writing. (2½ to 3 courses)

Atmospheric Sciences

(Office, 7127 Mathematical Sciences Building)

Akio Arakawa, D.Sc., *Professor of Atmospheric Dynamics.*
James G. Edinger, Ph.D., *Professor of Meteorology.*
Hans R. Pruppacher, Ph.D., *Professor of Atmospheric Physics (Chair of the Department).*
George L. Siscoe, Ph.D., *Professor of Atmospheric Physics.*
Richard M. Thorne, Ph.D., *Professor of Atmospheric Physics.*
Saltharipuram V. Venkateswaran, Ph.D., *Professor of Atmospheric Physics.*
Morton G. Wurtele, Ph.D., *Professor of Atmospheric Dynamics.*
Michio Yanai, D.Sc., *Professor of Atmospheric Dynamics.*
Yale Mintz, Ph.D., *Emeritus Professor of Meteorology.*
Morris Neiburger, Ph.D., *Emeritus Professor of Meteorology.*
Carlos R. Mechoso, Ph.D., *Assistant Professor of Atmospheric Dynamics.*
Derek C. Montague, Ph.D., *Assistant Professor of Atmospheric Chemistry.*
Max J. Suarez, Ph.D., *Assistant Professor of Atmospheric Dynamics.*

The Department of Atmospheric Sciences offers the M.S., C. Phil and Ph.D. degree. Below are the requirements for the three degrees.

Admission Requirements. There are no admission requirements in addition to University minimum requirements and no application form in addition to the one used by Graduate Admissions. Three letters of recommendation are required. For departmental brochures and information write to: Department of Atmospheric Sciences, UCLA, Los Angeles, California 90024. The Department recognizes the desirability of a wide variety of backgrounds of students concerned with study of the various aspects of the atmosphere. In addition to those 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 status 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.

Advising. Evaluations of academic progress are made each September when the Graduate Advisers, sitting as a committee, review the progress of each student and assist in formulating future plans. Records are kept of these meetings and additional meetings are held prior to Spring Quarter if students are not advancing as expected.

For the M.S. degree one adviser is assigned to each student after his/her first year of study.

Ph.D. students are assigned a 3-person Departmental Guidance Committee after one year's work has been completed, recommended by the Graduate Advisers and appointed by the Chair. The Chair of this committee then becomes the principal adviser of the student.

Major Fields or Subdisciplines

Dynamic and Synoptic Meteorology

Dynamics and Microphysics of Clouds and Precipitation

Radiation

Upper Atmospheric and Space Physics

Course Requirements. *M.S.* A total of nine (9) courses must be completed in graduate status, five of which must be in the 200 or 500 series. Students must also attain a grade of B (3.0) or higher in one 150 series or graduate course in each of two fields other than his/her field of specialization. The only formal course requirement beyond the UCLA general requirements is the seminar course, Atmospheric Sciences 260, in which the candidate must present a formal seminar, announced in the *UCLA Weekly Calendar,* and attended and graded by all faculty.

Ph.D. 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 the students to have insufficient background to help them in preparing to pass the Comprehensive Examination.

The Comprehensive Examination. The Comprehensive Examination is conducted twice a year based on coursework given during a prior 2-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. An average grade of 3.0 is required for a pass at the M.S. level; an average grade of 3.5 or better allows the student to continue toward entry into the Ph.D. program. Students are permitted two attempts to obtain the requisite grade either for termination at the M.S. level or for continuation toward a Ph.D. Students must, however, attempt the examination by the end of their first two years of study and if necessary, retake the examination at the earliest available time. The structure of the examination is the responsibility of the three Graduate Advisers who construct a separate examination in each major field or subdiscipline using material suggested by faculty members who have recently given the appropriate courses. The examination consists of two 3-hour written examinations.

M.S. Thesis Plan. Students with a grade point average of 3.5 or higher 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 prior to completion of the degree (at the end of the first year of study). The petition should set forth the subject and plan of work to be performed and must be signed by the supervising professor. Provided the student maintains a high academic standard in coursework, the accepted thesis may be used instead of the Comprehensive Examination for continuance toward entry into the Ph.D. program. No outside member is required on the thesis committee.

Ph.D. Oral Qualifying Examination. After passing the Comprehensive Examination at the requisite level, or completion of the M.S. thesis in this department, students must take a further in-depth written or oral examination in their area of research specialization. Subsequently, a full doctoral committee is appointed with two (or more) outside members which is responsible for conducting the Doctoral Candidacy Oral Examination on the student's chosen thesis topic and related areas, and the final thesis defense which is required for all students. Each of these examinations must be passed in no more than two attempts.

Time to Degree. *M.S.* From graduate admission to conferral of degree, normal progress is six (6) quarters. The maximum allowable time limit for the degree is nine (9) quarters.

Ph.D. Because of the variability in students' backgrounds, there is a corresponding variability in the period of study necessary for completion of the degree. After completion of the requirements for the M.S. in Atmospheric Sciences a student will normally be expected to pass the oral or written Departmental Qualifying Examination within three (3) quarters, advance to candidacy in six (6) quarters and complete the Ph.D. thesis defense in nine (9) quarters.

Final Ph.D. Oral Examination Following Completion of the Dissertation. This examination is required of all students.

Candidate in Philosophy Degree. All students are eligible to receive the C.Phil. degree upon advancement to candidacy for the Ph.D. degree.

500 Series Course Limitations. Only one (four units) 500 series course may apply to the minimum graduate course requirement for the M.S. degree.

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.

Disqualification. Students are normally terminated if they fail to maintain a 3.0 average for two consecutive quarters or if they fail to pass the graduate Comprehensive Examination after two attempts.

Appeals. Appeals may be made to the Chair but the student will be allowed to continue only in very special circumstances.

Graduate Courses

Dynamic and Synoptic Meteorology

206. Atmospheric Convection. Lecture, three hours. Prerequisite: course M149 or consent of instructor. Basic theory of Rayleigh convection. Experiments and theory of buoyant bubbles and plumes. Thermodynamics of moist air. Observations and theory of cumulus convection. Cumulus models. Mesoscale convective systems. Interaction of cumulus ensemble with the large-scale environment. Mr. Yanai

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

210A. Atmospheric Wave Motions. Lecture, three hours. Prerequisite: course M149 or equivalent. Oscillations of a compressible, stratified and rotating atmosphere. Geostrophic adjustment. Scale analysis instability. Vertical propagation of wave energy. Mr. Suarez

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: course 149 or consent of instructor. Basic numerical methods for initial-boundary value problems in fluid dynamics, with an 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

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. Suarez

214. Climatology. Lecture, three hours. Prerequisite: course 149 or consent of instructor. Observations of the atmospheric general circulation and the present climatic state. Global budgets of energy and angular momentum. The hydrologic cycle. Observations of past climates and history of climatic change. Feedback mechanisms determining the sensitivity of climate. Possible causes of climatic changes. Numerical experiments in climatic sensitivity. Mr. Suarez

216A. Dyamics of the Tropical Atmosphere I. Lecture, three hours. Prerequisite: course 206. General circulation of the tropics. Zonally averaged fields. Zonally varying features. Intertropical convergence zone. Monsoon circulation. The role of cumulus convection in the tropical circulation. Formation and structure of tropical cyclones. Theory and numerical models of tropical cyclones. Mr. Yanai

216B. Dynamics of the Tropical Atmosphere II. Lecture, three hours. Prerequisite: course 210A. Planetary-and-synoptic-scale wave disturbances in the tropics. Theory of equatorial waves. The energy cycle of tropical waves. Excitation mechanisms. Observation and theory of the quasi-biennial oscillation in the equatorial stratosphere. Mr. Yanai

218. Dynamics of the Atmosphere-Ocean Systems. Lecture, three hours. Mass, momentum and heat transfers between atmosphere and ocean; wind-driven ocean currents; thermohaline convection; dynamics of the Gulf Stream. Mr. Yanai

219. Special Topics in Dynamic Meteorology. (½ to 1 course) The content of this course varies from year to year.

Dynamics and Microphysics of Clouds and Precipitation

221A. Atmospheric Chemistry I. Lecture, three hours. Prerequisite: course 156 or consent of instructor. Clean air chemistry of the troposphere; trace gases of biogenic and anthrogenic 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 156 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 planetary atmospheres. Mr. Montague

223A. Cloud and Precipitation Physics I. Lecture, three hours. Prerequisite: course 152 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. Pruppacher

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. Pruppacher

224. Atmospheric Electricity. Lecture, three hours. Prerequisites: course 223B and 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. Mr. Pruppacher

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 modelling techniques of radiative effect of clouds; radiative dynamical interactions in cloudy atmospheres.

228B. Radar Meteorology. Lecture, three hours. Radar detection of spherical and non-spherical 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, squallines, and fronts; clear air echoes.

Radiation

235. Infrared Radiative Transfer. Lecture, three hours. Prerequisite: course 153. 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 153. 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 153. 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. The emphasis of the course will be to provide a familiarity with the available techniques in the literature.

Upper Atmospheric and Space Physics

240A. Solar System Magnetohydrodynamics. Lecture, three hours. Prerequisite: course 154 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.

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: course M154 and 240B. Formation of planetary ionospheric layers; transport processes; currents and electric fields; ionospheric plasma instabilities; non-linear effects and artificial modification. Mr. Venkateswaran

246. Physics of the Ionosphere. Lecture, three hours. Prerequisites; Physics 110A-110B or consent of instructor. Structure, composition and dynamics of ionospheric layers. Mr. Venkateswaran

247. Radiation Belt Plasma Physics. Prerequisite: course 240B or consent of instructor. Turbulent plasma instabilities, 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. The content of this course varies from year to year. Mr. Venkateswaran

249. Special Topics in Solar Planetary Relations. (½ to 1 course each) Selected topics of current research interest in the solar wind, magnetospheric or ionospheric physics.

254. Radiative and Photochemical Processes of the Middle Atmosphere. Lecture, three hours. Prerequisites: courses 153, 246, 255. Ultraviolet absorption processes. Infrared transfer by CO_2 and O_3. Radiative and photochemical roles of other trace constituents. Remove sensing of the middle atmosphere. Mr. Vankateswaran

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, semi-annual and quasi-biennial oscillations and the build-up 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

Seminars

260. Seminar in Meteorology. (½ course)

261. Seminar in Atmospheric Dynamics. (½ course)

262. Seminar in Cloud and Precipitation Physics. (½ course)

263. Seminar in Atmospheric Radiation. (½ course)

264. Seminar in Physics of the Upper Atmosphere. (½ course)

Individual Study and Research

596. Directed Studies for Graduate Students. (½ to 1 course)

597. Preparation for the Comprehensive Examinations. (½ to 1 course)

598. Research and Preparation of the Master's Thesis. (½ to 1 course)

599. Research on Doctoral Dissertation. (½ to 2 courses)

Graduate Courses of Special Interest to Qualified Meteorology Majors

Biomathematics 202A-B.

Chemistry 215; 223; 225.

Earth and Space Sciences 202; 203; M211; 214; 217; 228; 250; 261; 265.

Engineering: Mechanics and Structures 250A-250C; 251A-251C; 252A-252B; 259A.

Mathematics 250C; 265A-265B; 266A-266B-266C; 267A-267B; 269A-269B-269C; 271A-271B-271C; M274A-M274B; 276A-276B-276C.

Physics 210A-210B; 215A-215B; 222A-222B-222C; 231A-231B-231C.

Engineering: Chemical, Nuclear & Thermal Engineering 237C, 240.

Biochemistry

Graduate Study

Programs of study and research leading to the M.S. and Ph.D. degrees in the general area of biochemistry are offered in the Department of Biological Chemistry, School of Medicine, in the Division of Biochemistry, Department of Chemistry, and in the Department of Biology. More detailed information regarding admission requirements and opportunities for graduate studies in these programs may be obtained by writing to the Graduate Adviser in the department in which you are interested.

Biological Chemistry

(Office, 33-257 Center for the Health Sciences)

Robert J. DeLange, Ph.D., *Professor of Biological Chemistry.*

John Edmond, Ph.D., *Professor of Biological Chemistry.*

Armand J. Fulco, Ph.D., *Professor of Biological Chemistry.*

Dohn G. Glitz, Ph.D., *Professor of Biological Chemistry (Vice-Chair of the Department).*

Isaac Harary, Ph.D., *Professor of Biological Chemistry.*

Harvey R. Herschman, Ph.D., *Professor of Biological Chemistry.*

[16]Bruce D. Howard, M.D., *Professor of Biological Chemistry.*

[16]James F. Mead, Ph.D., *Professor of Biological Chemistry.*

John G. Pierce, Ph.D., *Professor of Biological Chemistry (Chair of the Department).*

[16]Sidney Roberts, Ph.D., *Professor of Biological Chemistry.*

David S. Sigman, Ph.D., *Professor of Biological Chemistry.*

William T. Wickner, M.D., *Professor of Biological Chemistry.*

Irving Zabin, Ph.D., *Professor of Biological Chemistry.*

Robert M. Fink, Ph.D., *Emeritus Professor of Biological Chemistry.*

Ralph W. McKee, Ph.D., *Emeritus Professor of Biological Chemistry.*

Joseph F. Nyc, Ph.D., *Emeritus Professor of Biological Chemistry.*

Emil L. Smith, Ph.D., *Emeritus Professor of Biological Chemistry.*

James C. Paulson, Ph.D., *Associate Professor of Biological Chemistry.*

John E. Snoke, Ph.D., *Associate Professor of Biological Chemistry.*

Patrice I. Zamenhof, Ph.D., *Associate Professor of Biological Chemistry.*

Kathryn L. Calame, Ph.D., *Assistant Professor of Biological Chemistry.*

William A. Coty, Ph.D., *Assistant Professor of Biological Chemistry.*

Kathleen Dixon, Ph.D., *Assistant Professor of Biological Chemistry.*

Kevin McEntee, Ph.D., *Assistant Professor of Biological Chemistry.*

Leonard H. Rome, Ph.D., *Assistant Professor of Biological Chemistry.*

•

Roslyn B. Alfin-Slater, Ph.D., *Professor of Nutrition and Professor of Biological Chemistry.*

[16]Samuel Eiduson, Ph.D., *Professor of Psychiatry in Residence and Professor of Biological Chemistry in Residence.*

Peter Edwards, Ph.D., *Associate Professor of Medicine in Residence and Associate Professor of Biological Chemistry in Residence.*

[16]George J. Popjak, M.D., D.Sc., *Professor of Psychiatry and Professor of Biological Chemistry.*

Marian E. Swendseid, Ph.D., *Professor of Nutrition and Professor of Biological Chemistry.*

[16]Stephen Zamenhof, Ph.D., *Emeritus Professor of Microbial Genetics and Emeritus Professor of Biological Chemistry.*

Admission Requirements (Master of Science and Ph.D. Degrees)

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 the areas are also recommended where possible.

All students admitted to this department must take a nonrepeatable orientation examination (about one to two weeks before the beginning of the Fall Quarter) in organic chemistry, physical chemistry and biochemistry to help determine any deficiencies in the prerequisite training. With the approval of the Graduate Adviser, limited deficiencies can be made up during the first year of graduate study.

Students 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 the year of expected admission. It is strongly recommended that students 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. Students whose native language is other than English are expected to take an appropriate examination, which tests proficiency in English, prior to the time of application to this department (e.g., TOEFL).

There is no separate application form required for admission to the Department but three letters (minimum) of recommendation are required. (Students should have them sent directly to the Graduate Information Office at the address listed below.)

Departmental brochures and information may be obtained by writing to: Graduate Information Office, Department of Biological Chemistry, UCLA School of Medicine, Los Angeles, Ca 90024.

Advising (Master of Science and Ph.D. Degrees)

Graduate Adviser: Dr. James C. Paulson, Dept. of Biological Chemistry, UCLA School of Medicine, Los Angeles, CA 90024.

The Graduate Adviser, with the assistance of the departmental Graduate Student Guidance Committee (appointed by the Department Chair), acts as a representative of the faculty to provide guidance and supervision prior to enrollment at UCLA, during the initial period (usually one year) of graduate study, and as needed during the remainder of the student's studies.

Each graduate student meets with the Graduate Adviser at least once each quarter to evaluate academic progress and to plan the continuing course of studies. Once a doctoral committee (or a thesis committee) has been appointed, the student should consult with the committee (and particularly the chair of the committee) prior to meeting with the Graduate Adviser to plan the course of studies

General Course Requirements (Master of Science and Ph.D. Degrees)

All graduate students must take the three "core" courses (Biol. Chem. M253, M255 and M267) unless excused by the Graduate Advis-

er. (See additional course requirements under each degree program.)

Written Qualifying or Comprehensive Examination (Master of Science and Ph.D. Degrees)

After completing the core course requirements (see above), all students in this department 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 the students' answers to these questions. The Graduate Student Guidance Committee evaluates the overall student performance on the examination and makes a recommendation to the departmental faculty of one of the following for each student:

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 makes the decision whether to give a student who fails the examination an opportunity to take the examination a second time (permission is rarely given to take it 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.

Specific Requirements for the Master of Science Degree

(see General Requirements listed above)

Course Requirements. In addition to the core course requirements described above for all students in this department, candidates for the master's degree should complete courses fulfilling any two of collaterals A, B or C (see Specific Requirements for the Ph.D. Degree for a more complete description of the collaterals). Further electives are chosen to complete a total of nine courses (36 units).

Teaching Experience. In general, no teaching requirements are expected of students in the master's program, although they might be asked to help grade examinations, etc., from time to time.

Thesis or Comprehensive Examination Plans. In general, this department prefers students to enter directly into the Ph.D. program, but if a student enters the master's program, the Comprehensive Examination Plan is preferred. Only in exceptional situations will a student be approved for the Thesis Plan. In either plan the student must pass the departmental Written Examination at the master's level of achievement (see above).

Comprehensive Examination Plan: Only course requirements and the written examination are needed to complete this plan.

Thesis Plan: In addition to coursework, a written thesis is required. A thesis committee consisting of the Thesis Adviser and two other faculty members (one may be from outside the Department), will help the candidate plan the thesis research, determine the acceptability of the thesis, administer a final examination (if deemed appropriate) and recommend 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.

Time to Degree. Students in the Comprehensive Examination Plan can normally expect to receive their master's degrees after three academic quarters plus a summer (when the Written Examination is given). This assumes the maintenance of satisfactory progress and the absence of deficiencies upon admission to graduate status. Students in the Thesis Plan will ordinarily require a minimum of six academic quarters (plus one to two summers) to complete the requirements.

500 Series Course Limitations. This department follows the regulations of the Los Angeles Division of the Academic Senate regarding 500 series courses to meet requirements for the master's degree. These regulations include the stipulations that no more than two courses (8 units) in the 500 series shall apply toward the nine courses (36 units) required for a master's degree, and that only one (4 units) of the two courses may be counted toward the minimum of five graduate courses (20 units) required for the degree.

With the approval of the Graduate Adviser, courses 596, 597 and 598 may be taken by graduate students in the master's program if they are appropriate to the student's programs. In general, a student in the Comprehensive Examination Plan would not register for 596 or 598, but might register for 597 (Preparation for Examinations). A student in the Master's Thesis Plan might register for all three courses at appropriate times during his/her studies. All three courses (596, 597 and 598) are graded S/U only, and may be taken as often as necessary (2-12 units each time).

Disqualification. Termination of a student's graduate status may be recommended by the Graduate Student Guidance Committee (or the thesis committee, if applicable). Reasons for such a recommendation might include (a) failure to maintain a 3.0 grade point average, (b) particularly poor performance in the major departmental courses, (c) failing the Written Examination, (d) failure to complete required collateral requirements within a reasonable time, (e) failure to maintain adequate progress in research (Thesis Plan), (f) other.

Appeals. A student for whom a recommendation of termination has been made can appeal to the Graduate Student Guidance Committee (or the thesis committee, if applicable) for reconsideration of the recommendation. In the event that the recommendation is not withdrawn, the student can appeal directly to the Department Chair who will consult with the departmental faculty as to whether the recommendation should be changed.

Specific Requirements for the Ph.D. Degree

(see General Requirements listed above)

Admission to the Doctoral Program. 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. degree.

Course Requirements. In addition to the above course requirements, students in the Ph.D. program are expected to complete:

(a) Biol. Chem. 220 (Biochemical Preparations) each quarter during the first year. Each student shall arrange for at least two rotations in the laboratories of different faculty members to help the student in the selection of a research adviser.

(b) Collateral A: An approved course involving scientific instrumentation ("language of an instrument") or statistics.

(c) Collaterals B and C: Two courses (minimum), offered by departments other than this one, that would be of particular help to the student in his/her graduate studies.

(d) Biol. Chem 596, 597 and/or 599 during quarters in which research (596, 599) or study for written or oral examinations (597) is part of the student's program. Biol. Chem. 599 is for students who have passed their oral examinations; Biol. Chem. 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).

Written and Oral Qualifying Examinations. A student in the Ph.D. program who has passed the departmental Written Examination at the Ph.D. level of achievement (see above) should consult with the Department Chair who is responsible for nominating faculty members (three in and two out of the Department) to serve on the student's doctoral committee. Suggestions for members of the doctoral committee should be made to the Department Chair by the student after consultation with his/her research adviser and other potential members of the doctoral committee. The doctoral committee is then appointed by the Dean of the Graduate Division, usually at least three to four weeks prior to the time of the Oral Qualifying Examination (see below).

The Oral Qualifying Examination, which must be passed before a student can be advanced

to candidacy, consists of the presentation and defense of a research proposal to the student's doctoral committee (see above). This proposal should not be in the area of the student's dissertation research. Written summaries of the proposal should be given to each member of the doctoral committee sufficiently in advance of the examination date to enable the committee members to study it in detail. A brief informal discussion of the student's research project should be presented before or after the Oral Examination. The doctoral committee determines whether the student passes the examination and whether a student who fails the examination will be allowed to repeat it (can be repeated only once). It is expected that students will complete the Oral Qualifying Examination by the beginning of the third year of graduate work.

Final Oral Examination Following Completion of the Dissertation. The doctoral committee may elect to waive the Final Oral Examination.

Time to Degree. Students can normally expect to receive their Ph.D. degrees in 15 quarters (including summers) if satisfactory progress is maintained and there were no deficiencies upon admission to graduate status.

Disqualification. Termination of a student's graduate status may be recommended by the Graduate Student Guidance Committee or the student's doctoral committee. Reasons for such a recommendation might include (a) failure to maintain a 3.0 grade point average (b) particularly poor performance in the major departmental courses (c) failing the Written Qualifying Examination (d) failing the Oral Qualifying Examination (e) failure to complete required course requirements within reasonable time (f) failure to maintain adequate progress in research (g) other.

Appeals. A student for whom a recommendation of termination has been made can appeal to the Graduate Student Guidance Committee or the doctoral committee for reconsideration of the recommendation. In the event that the recommendation is not withdrawn, the student can appeal directly to the Department Chair who will consult with the departmental faculty as to whether the recommendation should be changed.

Other Relevant Information. Students can apply for the M.D.-Ph.D. program by making simultaneous applications for graduate status in this department and for admission to the School of Medicine. Acceptance by both of the concerned units is necessary for this program. Certain changes in the requirements (e.g., fewer required collaterals) allow some savings in time compared to separate M.D. and Ph.D. degrees.

Most students in the Ph.D. program in this department receive financial support, if needed.

Upper Division Courses

101A-101B-101C. Biological Chemistry. Lecture, three hours. Prerequisite: organic chemistry. Required in the medical curriculum; consent of the instructor is required for nonmedical students.

101E. Biological Chemistry Laboratory. Laboratory, seven hours. Required in the medical curriculum; consent of instructor is required for nonmedical students. Experiments illustrating some of the procedures employed in clinical chemistry, enzymology and metabolic studies.

102A-102B. Biological Chemistry Lecture (Dental Students). Lecture, three hours. Prerequisite: courses for admission to dental school. Required in the dental curriculum; consent of instructor is required for nondental students. The biochemical properties and structures of living systems are considered with special emphasis on mineral metabolism and nutrition.

102C. Biological Chemistry Laboratory and Seminar (Dental Students). (½ course) Laboratory, four hours. Required in the dental curriculum; consent of instructor is required for nondental students. The laboratory, which consists of experiments designed to illustrate biochemical principles, involves studies on enzymes, metabolic processes, respiration and calcified structures. The seminars, which will be given by the students to small discussion groups, involve presentation of material from current research dealing with biochemical studies related to dentistry.

Mr. Snoke and the Staff

Graduate Courses

201A-201B. Biological Chemistry. Lecture, three hours. Prerequisites: Organic chemistry, a course in undergraduate biochemistry other than a beginning survey course. Consent of instructor is required. A graduate level course in fundamentals of biochemistry, with emphasis on mammalian biochemistry. Structure, function and metabolism of major cell constituents.

220A-220B-220C. Biochemical Preparations. (½ to 2 courses) Prerequisite: consent of instructor. During the first quarter, students will carry out supervised experiments utilizing a variety of laboratory techniques important in biochemical research. In the Winter and Spring quarters (220B and 220C) each student will arrange to apprentice in the laboratories of one or more departmental faculty members. This apprenticeship program will allow the student to acquire indepth laboratory experience in specific research areas and will facilitate an informed decision on his part in the selection of a thesis-research adviser. Graded S/U.

221. Functional Neurochemistry. Lecture or recitation, three hours. Prerequisites: courses 101A-101B-101C or equivalent. Chemistry and metabolism of neural tissue with particular relationship to specialized function in the central nervous system.

Mr. Roberts and the Staff

222. Biochemistry of the Synapse. (½ course) Lecture or recitation, two hours. Prerequisite: course 221. 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

223. Current Topics in Neurochemistry. (½ course) Lecture or recitation, two hours. Prerequisite: course 221. Detailed analysis of a circumscribed area of neurochemistry of current interest. One of the following topics may be presented: metabolic diseases affecting brain function, developmental neurochemistry, role of cyclic nucleotides in neural activity, biochemical differentiation of the nervous system, research methods in neurochemistry, brain specific macromolecules.

M226. Chromosome Structure and Regulation. (Same as Biology M226, Chemistry M226, Microbiology M226, Microbiology and Immunology M226.) Lecture, three hours. Prerequisite: consent of instructor. Lectures and panel discussions on the structural and functional organization of eukaryotic chromosomes. S/U grades are used for this course.

Mr. Martinson, Mr. Tobin, Mr. Wall

M237. Steroid Hormones. Lecture, two hours. (Same as Biology M237). Detailed examination of the mode of action of steroid hormones on both *in vivo* and *in vitro* systems. Topics will include steroid uptake, receptor purification & activation, and nuclear events among others. Previous courses in Biochemistry and Cell Biology are highly desirable.

Mr. O'Connor

248. Molecular Genetics. Lecture, three hours. Prerequisite: consent of instructor. Basic concepts in modern genetics will be presented, drawing examples from both eukaryotic and prokaryotic systems. Emphasis will be placed on the use of genetic techniques for addressing fundamental questions in biochemistry and molecular biology. Topics discussed will include mutagenesis, mutant selection, recombination, genetic mapping, complementation, transposable elements, gene organization, genetic regulation, and molecular evolution.

Mr. Dixon, Ms. Calame, Mr. McEntee

M253. Macromolecular Structure. (1½ courses) (Same as Chemistry M253.) Lecture or recitation, five hours. Prerequisites: Chemistry 110A, 156, 157A-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.

M255. Enzymes, Metabolism and Regulation. (1½ courses) (Same as Chemistry M255.) Lecture or recitation, five hours. Prerequisites: Chemistry 110A, 156, 157A-157B or Biological Chemistry 101A-101B or 201A-201B or equivalent. Recommended: Biological Chemistry/Chemistry M253. Thermodynamic and kinetic aspects of metabolism; regulatory properties of enzymes; metabolic regulation; consideration of comparative aspects of metabolism in relation to physiological function; and enzymic mechanisms and methods for their study.

Mr. Atkinson, Mr. Coty, Mr. Edmond

M257. Physical Chemistry of Biological Macromolecules. (½ course) (Same as Chemistry M257.) Lecture, two hours. Prerequisite: Chemistry 110A or 22 or consent of instructor. Theory of hydrodynamic, thermodynamic, optical and x-ray techniques used to study the structure and function of biological macromolecules.

259. Biochemical Endocrinology. (½ course) Prerequisite: Biological Chemistry 101A-101B or 201A-201B, or Chemistry 153 or equivalent. A lecture course emphasizing aspects of the structures of peptide and steroid hormones which are important for their biological actions, the interaction of these hormones with cell receptors, the molecular mode of action of peptide and steroid hormones and the role of second and third messengers in hormone action. Winter quarter, alternate years.

Mr. Coty, Mr. Pierce, Mr. Roberts

M261. Advanced Chemistry and Biochemistry of Lipids. (½ course) (Same as Chemistry M261.) Lecture, two hours. Prerequisites: Biological Chemistry 101A-101B or 201A-201B, Chemistry 157A-157B or equivalent. Knowledge of elementary chemistry and biochemistry of lipids essential. The biochemistry of lipids including chemical and physical characteristics of lipids and their metabolism. Mr. Mead, Mr. Popjak

M264A-M264B-M264C. Molecular Basis of Atherosclerosis. (½ course) (Same as Chemistry M264 and Microbiology M264.) Prerequisite: course M216 or equivalent with consent of instructor. The course will cover the biochemistry, morphology and physiology of atherosclerosis. Emphasis will be placed on the chemistry of lipoproteins and the role of plasma lipoproteins on the regulation of tissue lipid metabolism and the development of atherosclerosis.

265. Seminar in the Biochemistry of Nucleic Acids. (½ course) Lecture or recitation, one hour. Prerequisite: Biological Chemistry or Chemistry M253 or equivalent. Biochemistry and chemistry of nucleic acids and nucleotides. Mr. Glitz

266A-266B-266C. Seminar in the Biochemistry of Differentiation. (½ course 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. (1½ courses) (Same as Chemistry M267.) Lecture or recitation, five hours. Prerequisites: Chemistry 157A-157B or Biological Chemistry 101A-101B or 201A-201B or equivalent. Recommended: Biological Chemistry or Chemistry M253. Metabolism of nucleic acids and proteins; biosynthesis of complex lipids and polysaccharides; structure and properties of cellular organelles.

M269. Developmental Biochemistry. (½ course) (Same as Chemistry M269.) Lecture, two hours. Prerequisite: Biological Chemistry 267 or consent of instructor. This course will deal with the 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 will be studied as they contribute to such topics as hormone induction, morphogenesis and viral transformation. Emphasis will be placed on the use of differentiating *in vivo* systems and cell culture as models.
Mr. Harary, Mr. Herschman

M298. Seminar in Current Topics in Molecular Biology. (½ course) (Same as Biology M298, Chemistry M298, Microbiology and Immunology M298 and Molecular Biology M298.) Discussion, one hour. Prerequisite: enrollment must be approved by the instructor and by the Graduate Adviser of the Interdepartmental Molecular Biology Ph.D. Committee. Each student enrolled conducts or participates in discussions on assigned topics. May be repeated for credit.

Individual Study and Research

596. Directed Individual Study and Research. (½ to 3 courses) Laboratory, by arrangement. Prerequisite: consent of Graduate Adviser. Graded S/U.

597. Preparation for Examinations. (½ to 1 course) Prerequisite: consent of Graduate Adviser. Individual study for qualifying examination for Ph.D. or comprehensive examination for the master's degree. Graded S/U.

598. Preparation of the Master's Thesis. Prerequisite: consent of Graduate Adviser. Preparation of research data and writing of master's thesis. Graded S/U.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 3 courses) Prerequisite: consent of Graduate Adviser. Preparation of research data and writing of Ph.D. dissertation. Graded S/U.

Biology

(Office, 2203 Life Sciences Building)

Albert A. Barber, Ph.D., *Professor of Cell Biology.*
George A. Bartholomew, Ph.D., *Professor of Zoology.*
Joseph Cascarano, Ph.D., *Professor of Cell Biology.*
David J. Chapman, Ph.D., *Professor of Biology.*
William R. Clark, Ph.D., *Professor of Cell Biology.*
Martin L. Cody, Ph.D., *Professor of Biology.*
Nicholas E. Collias, Ph.D., *Professor of Zoology.*
Wilbur T. Ebersold, Ph.D., *Professor of Biology.*
Roger O. Eckert, Ph.D., *Professor of Biology.*
Franz Engelmann, Ph.D., *Professor of Biology.*
John H. Fessler, Ph.D., *Professor of Molecular Biology.*
Malcolm S. Gordon, Ph.D., *Professor of Biology.*
George C. Gorman, Ph.D., *Professor of Biology.*
Thomas R. Howell, Ph.D., *Professor of Zoology.*
Thomas W. James, Ph.D., *Professor of Cell Biology.*
J. Lee Kavanau, Ph.D., *Professor of Biology.*
James A. Lake, Ph.D., *Professor of Molecular Biology.*
George G. Laties, Ph.D., *Professor of Plant Physiology.*
F. Harlan Lewis, Ph.D., *Professor of Biology.*
O. Raynal Lunt, Ph.D., *Professor of Biology.*
Austin J. MacInnis, Ph.D., *Professor of Cell Biology.*
James G. Morin, Ph.D., *Professor of Zoology.*
Leonard Muscatine, Ph.D., *Professor of Biology.*
Park S. Nobel, Ph.D., *Professor of Biology.*
John D. O'Connor, Ph.D., *Professor of Developmental Biology.*
Bernard O. Phinney, Ph.D., *Professor of Biology.*
Dan S. Ray, Ph.D., *Professor of Molecular Biology.*
Winston A. Salser, Ph.D., *Professor of Molecular Biology.*
Richard W. Siegel, Ph.D., *Professor of Biology.*
Larry Simpson, Ph.D., *Professor of Cell Biology.*
Clara M. Szego, Ph.D., *Professor of Biology.*
Henry J. Thompson, Ph.D., *Professor of Botany.*
J. Philip Thornber, Ph.D., *Professor of Molecular Biology (Chair of the Department).*
Peter P. Vaughn, Ph.D., *Professor of Zoology.*
David Appleman, Ph.D., *Emeritus Professor of Plant Physiology.*
Gordon H. Ball, Ph.D., *Emeritus Professor of Zoology.*
Jacob B. Biale, Ph.D., *Emeritus Professor of Biology.*
Frederick Crescitelli, Ph.D., *Emeritus Professor of Cell Biology.*
Eric B. Edney, Ph.D., *Emeritus Professor of Biology.*
Karl C. Hamner, Ph.D., *Emeritus Professor of Botany.*
Arthur W. Haupt, Ph.D., *Emeritus Professor of Botany.*
Mildred E. Mathias, Ph.D., *Emeritus Professor of Botany.*
Everett C. Olson, Ph.D., *Emeritus Professor of Botany.*
Flora Murray Scott, Ph.D., *Emeritus Professor of Botany.*
Charles A. Schroeder, Ph.D., *Emeritus Professor of Botany.*
Fritiof S. Sjostrand, M.D., Ph.D., *Emeritus Professor of Molecular Biology.*
Boyd W. Walker, Ph.D., *Emeritus Professor of Zoology.*
Vladimir Walters, Ph.D., *Emeritus Professor of Zoology.*
Samuel G. Wildman, Ph.D., *Emeritus Professor of Botany.*
Clifford F. Brunk, Ph.D., *Associate Professor of Cell and Molecular Biology.*
Arthur C. Gibson, Ph.D., *Associate Profesor of Biology.*
Robert Goldberg, Ph.D., *Associate Professor of Biology.*
Elma Gonzalez, Ph.D., *Associate Professor of Cell Biology.*
Michael Grunstein, Ph.D., *Associate Professor of Biology.*
Henry A. Hespenheide, Ph.D., *Associate Professor of Biology.*
Harumi Kasamatsu, Ph.D., *Associate Professor of Biology.*
John R. Merriam, Ph.D., *Associate Professor of Genetics.*
Kenneth A. Nagy, Ph.D., *Associate Professor of Biology in Residence.*
Paul H. O'Lague, Ph.D., *Associate Professor of Biology.*
Charles C. Taylor, Ph.D., *Associate Professor of Biology.*
Richard K. Vance, Ph.D., *Associate Professor of Biology.*
J. Chlöe Bulinski, Ph.D., *Assistant Professor of Cell Biology.*
Donald G. Buth, Ph.D., *Assistant Professor of Biology.*
Michael Greenfield, Ph.D., *Assistant Professor of Biology.*
Meyer B. Jackson, Ph.D., *Assistant Professor of Biology.*
Judith A. Lengyel, Ph.D., *Assistant Professor of Biology.*
Peter M. Narins, Ph.D., *Assistant Professor of Biology.*
Jane A. Peterson, Ph.D., *Assistant Professor of Biology.*
Allan J. Tobin, Ph.D., *Assistant Professor of Biology.*
Elaine M. Tobin, Ph.D., *Assistant Professor of Biology.*
Dan B. Walker, Ph.D., *Assistant Professor of Botany.*

•

Robert Barrett, Ph.D., *Lecture in Biology.*
Elsie C. Collias, Ph.D., *Research Associate in Zoology.*
Jared M. Diamond, Ph.D., *Professor of Physiology.*
J. William Schopf, Ph.D., *Professor of Geology.*
M. Anne Spence, Ph.D., *Professor of Psychiatry and Biomathematics in Residence.*
James M. Northern, *Senior Museum Scientist, Bird and Mammal Collection (Dickey Collection).*
David Verity, B.S., *Senior Museum Scientist, Botanical Gardens and Herbarium.*

Graduate Programs

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 advice of staff members in their field of interest. Prospective applicants to this department are invited to visit the campus for this purpose.

Admission Requirements

All applicants are required to meet the minimum requirements for admission established by the Graduate Division, including a minimum grade point average of 3.0.The Department encourages applications from students in all areas of science, but expects successful applicants to have or 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 to the M.A. program.

Graduate Record Examination (GRE). All applicants are required to take the Aptitude Test (Verbal, Quantitative and Analytical) of the Graduate Record Examination. The Advanced Test in Biology is not required.

Letters of Recommendation. Three letters of recommendation are required. These should be from professors, supervisors, or others who may provide an evaluation of accomplishments or potential in research, scholarly activities, teaching and related academic functions.

Minority Applicants. The Department has an affirmative action program dedicated to the recruiting, financing, and supplying of special guidance for minority groups. Minority applications are reviewed by both the Department and the Departmental Committee on Minorities.

Teaching Credentials. Teaching credentials and Ph.D.'s in Education with specialization in Biology are obtained through the School of Education with assistance from the Graduate Adviser in Biology. A Cognate in Biology may

be obtained by completing the equivalent of the master's degree in Biology.

Correspondence and Information. Applications, departmental brochures and additional information may be obtained from: The Graduate Affairs Office, Department of Biology, 2316 Life Sciences, UCLA, Los Angeles, California 90024.

Program of Study

The Department is organized for administrative purposes into two divisions based on mutual interest. Applications should be directed to either:

Div. I — Molecular, Cell & Developmental Biology, or Div. II — Organismic and Population Biology.

The major fields and subdisciplines are listed under faculty interests in the Departmental brochure.

Study consists of coursework and research within the Department and within related programs in biochemistry, geology, microbiology, and molecular biology on the campus. Opportunities are also available away from campus for intensive study of marine biology at the Catalina Marine Science Center in the Fall Quarter (CMBQ) and of field biology in the Spring Quarter (FBQ). Courses and other opportunities for study are also available in several of the basic science departments of the School of Medicine, located on campus.

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. degree. However, in the pursuit of certain subspecialties of biology, students may be required to gain proficiency in one or more foreign languages.

Advising

The Graduate Adviser. All academic affairs for graduate students in Biology are directed through the Graduate Adviser. The Graduate Adviser is assisted by the administrative staff of the Graduate Affairs Office.

Guidance Committee. The Graduate Adviser establishes, at the time of admission to graduate study, a Guidance Committee consisting of three faculty members for each student. The chair of the Guidance Committee acts as the student's Provisional Adviser. The Divisional affiliation of the Guidance Committee chair determines the appropriate examination and review procedures for the student.

Service as a Provisional Adviser is designed to be provisional for both professor and student. It does not commit the professor to supervise the dissertation or thesis, nor does it commit the student to a professor. Changes in Provisional Adviser are made by mutual consent of concerned parties and approval of the Graduate Adviser. Lack of a Provisional Adviser places a student on probation to the end of the quarter when he/she is subject to dismissal if a Provisional Adviser is not obtained. Division I: has elected that guidance committees are formed only for the first year for students in that Division. If the student has not obtained a permanent sponsor (chair of the doctoral committee) by the end of his/her first year, he/she will be advised in their second year by the Graduate Adviser. Any student without a permanent sponsor by the end of his/her second year will be dismissed. Division II: a Provisional Adviser serves until the student finds a Permanent Adviser and the doctoral or master's examination or thesis committee is established.

To assess the incoming student's knowledge, and as an aid in advising students in their studies, each student is required to complete the Departmental Written Qualifying Examination at an early point in his/her graduate career. The exact timing and content of the DWQE varies between the Divisions.The examination is given twice each academic year, in the Fall and Spring Quarters.

Performance on the first attempt is used by the Guidance Committee to assist the student in remedying deficiencies. Any area passed on the first attempt need not be retaken. All areas not passed must be retaken the next time the examination is offered. All areas must be passed by the second attempt or the student will be in violation of normal progress and placed on academic probation subject to dismissal.

Disqualification and Appeal of Disqualification. A student in violation of normal progress is placed on academic probation, ineligible for departmental support, and may be disqualified for the following reasons:

1) Grade point average below 3.0;

2) Unsatisfactory performance as determined by the students' advisory committee;

3) Failure to pass all areas of the Departmental Written Qualifying Examination;

4) Failure to pass the Master's Comprehensive Examination, or failure to pass the Ph.D. Oral Qualifying Examination;

5) Failure to take either examination within the specified time limits;

6) Failure to maintain a Provisional or Permanent Adviser (Ph.D.); and/or

7) Failure to complete the Master's degree within six quarters, or failure to complete the doctoral dissertation within 18 quarters of residence following first registration.

A recommendation for disqualification is open for appeal to the appropriate subgroup or Chair of the Department.

The Master of Arts Degree

Admission to the Master's Program. Applications are evaluated by the appropriate Divisional Admissions Committee.

Course Requirements. The program consists of at least nine courses completed in graduate status, of which at least five must be graduate (200 series) courses. The remainder may be 100 or 200 level, or 500 level as noted below. No more than two courses (8 units) of 596, Directed Individual Study, may apply toward the minimum 9-course requirement; and only one course (4 units) of 596 may be counted toward the minimum 5-graduate-course requirement. Courses graded S/U may not be applied toward the minimum requirement, except that a S/U graded course outside the major and applicable to the degree may count, provided that no more than one such course is taken per quarter.

Specific course requirements are established individually for each student by his/her 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 student's master's thesis committee of three faculty. Before beginning work on the thesis, the student obtains approval of the subject and general plan from the faculty members concerned and from his/her thesis committee.

Comprehensive Examination Plan. The Master's Comprehensive Examination is a 3-hour examination prepared and graded by the student's committee or committee chair, and approved by the Graduate Adviser. The examination is graded pass or fail. If a student fails, recommendation for or against a second examination must be made by the Graduate Adviser.

Time to Degree. Students enrolled in the master's program, either by thesis or examination, are expected to complete the degree within six quarters.

The Ph.D. Degree

Admission to the Doctoral Program. Each Division determines admission of students to the Ph.D. program separately.

Division I. Applications for doctoral study in fields associated with Division I are considered by the Division I Admissions Committee. Ph.D. students in Division I are admitted in the Fall Quarter.

Division II. Applications to Division II are reviewed by the division's Admissions Committee, which advises prospective sponsors about the desirability of admission, although admission is dependent on obtaining a provisional sponsor.

Course Requirements. There are no formal course requirements for the Ph.D. Specific course requirements are established individually for each student by his/her Guidance Committee. All students are required to enroll for full time study, as defined by the Graduate Division.

Students are strongly encouraged to rotate laboratory and/or course experience with several faculty members during their first year of study as an aid to choosing a Permanent Adviser.

Teaching Experience. Each student is required to complete one academic year as a teaching assistant.

Permanent Adviser and Doctoral Committee. The importance of finding a Permanent Adviser and dissertation research supervisor to chair the doctoral committee is a *sine qua non* for the doctoral degree. Failure to find or maintain a Permanent Adviser and dissertation research supervisor places a student in probationary status for one quarter, after which he/she is dismissed if no adviser is obtained. Students are urged to discuss permanent sponsorship and dissertation research with faculty at the earliest opportunity, to pick a Permanent Adviser by the end of their first year, and to advance to candidacy by the end of their second year; in all cases they are required to advance to candidacy by the end of their third year in residence following first registration.

The doctoral committee consists of the Permanent Adviser who serves as the chair of the committee, two other faculty members of the Department, and two faculty members from outside the Department and outside the student's major field, in accordance with the provisions of the Graduate Division.

The doctoral committee conducts the Oral Qualifying Examination and guides the student in the preparation and defense of the dissertation.

Oral Qualifying Examination (OQE). The OQE is conducted by the doctoral committee as prescribed by the Graduate Division. The OQE includes the preparation, presentation and defense by the student of an original written research proposal, a copy of which is deposited in the student's file. The examination is graded Pass, Fail, or Repeat. A failure requires dismissal. The second attempt at the exam is graded Pass/Fail. The examination must be completed by the end of the third year following first registration or normal progress will have been violated. A grade of repeat also violates normal progress after the third year.

Following successful completion of the OQE and completion of the administrative details, the student is advanced to candidacy.

Final Oral Examination Following Completion of the Dissertation. The candidate must complete a dissertation by demonstrating an original contribution to knowledge, written to conform to the regulations set by the University. The doctoral committee guides and reviews the research and writing. Final approval in the Department is accomplished when the committee approves the written form and is satisfied with the Final Oral Examination.

Requirements for the Candidate in Philosophy Degree. Requirements for the Candidate in Philosophy 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.

Time to Degree. The normative time for the Ph.D. degree in Biology is 16 quarters. Failure to complete the dissertation within 18 quarters places the student on academic probation.

*Graduate Courses

The consent of the instructor is required for admission to all graduate courses. Any additional prerequisites are stated in the course descriptions.

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. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Lecture and laboratory. Prerequisite: consent of instructor. Structure, reproduction, life histories, systematics and biology of marine algae; techniques in culture and cytological investigation of algal material.

204A. Advanced Algae. Lecture, four hours. Prerequisite: consent of instructor. A consideration of current research in experimental psychology. 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. Prerequisite: consent of instructor. A course designed to introduce students to current concepts in algal systematics. The 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. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Functional morphology, life histories, and systematics of marine invertebrates of all major and most minor taxa; emphasis on the living animal and its habitat.

206. Advanced Ichthyology. Lecture, three hours; laboratory, three hours. Prerequisite: course 111 or 112. Advanced study of various aspects of fish biology. The theme will vary from year to year. May be repeated for credit. Mr. Buth

207. Molecular and Cellular Biophysics. Lecture, three hours. Prerequisites: Math 32A or equivalent; Physics 6C; Chemistry 25 and 110A, or permission of instructor. Chemistry 110B or 156 strongly recommended. The course will first develop areas of physics including: thermodynamics, diffusion, statistical mechanics, and molecular forces. This material will then be applied 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 will also be discussed. Mr. Jackson

208. Advanced Vertebrate Morphology. Lecture, two hours; laboratory, eight hours. Prerequisites: course 110 or the equivalent and consent of instructor. Emphasizes a functional approach to evolution of the vertebrate locomotor, feeding, and circulatory systems. Laboratory includes comparative and experimental analyses of morphological adaptation. An independent project is required. May be taken twice for credit. Ms. Peterson

210. Advanced Ornithology. Lecture, two hours; laboratory, two hours; fieldwork, two hours. Prerequisites: course 114 or equivalent and consent of instructor. Advanced study of topics in avian biology, including systematics, distribution, behavior, and ecology. Students will carry out individual study projects in laboratory, museum, or field. Mr. Howell

211. Animal Sociology. Lecture, two hours; discussion, two hours. Prerequisite: course 129, The Behavior of Animals, or equivalent. The description, analysis, physiology, ecology and evolution of different social systems in animals. Mr. Collias

213. Community Ecology. (½ course) 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

214. Ecological Physiology (½ course) Lecture, two hours. A consideration of the ecologically relevant aspects of animal physiology. Mr. Bartholomew, Mr. Nagy

215. Theoretical Population Biology. Lecture, three hours. Prerequisites: courses 6 and 8; Mathematics 32A or 3C, or consent of instructor. The use of mathematical models in studying ecological and evolutionary systems. Relevant mathematical techniques discussed include basic calculus, differential equations, linear algebra, and probability. This course is not open to students who have previously completed 119. Mr. Taylor, Mr. Vance

217. Marine Ecology. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Structure, diversity and energetics of marine communities; behavior, population dynamics, and biogeography of component species; associated oceanography and geology. Mr. Vance

218. Oceanology. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Ecology and dynamics of pelagic and benthic associations; physio-chemical properties of seawater and marine substrates and their biological significance; qualitative and quantitative methods of oceanology.

219. Animal Behavior in Laboratory and Field. Discussion, two hours; laboratory, six to eight hours. Prerequisites: course 129 and consent of instructor. Limited enrollment. Laboratory and field studies of selected problems in animal behavior. Mr. Collias

M220. Multigene Families. (Same as Anatomy M213.) Lecture, two hours; discussion, two hours. Prerequisites: course M132 and 144 (or equivalent) and consent of instructor. Analysis of the molecular structure, developmental regulation, and evolution of multigene families. Topics to be discussed will include the hemoglobins, immunoglobulins, histones, ribosomal RNAs, satellite DNAs, and histocompatibility antigens. Grading basis S/U. Mr. Campbell, Mr. Tobin

221. Genetic Analysis. Lecture and 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 will be provided. Topics to be presented 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. Lecture. Prerequisite: course 8. Intensive study of selected topics.

223A-223B. Advanced Genetics Laboratories. Laboratory, nine hours. Prerequisites: course 8 or equivalent and consent of instructor. Original research with supervision in eukaryotic genetics; topics include transmission, developmental and behavioral genetics. 223A and 223B may be taken one time each for credit. Mr. Merrian, Mr. Siegel

224. Developmental Biology of Marine Organisms. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Descriptive and experimental studies of developmental stages of marine plants and animals; patterns of reproductive biology; larval biology; metamorphosis.

225. Special Topics in Development. Lecture, three hours. Variable topics emphasizing the control of eukaryotic gene expression and morphogenesis. Special attention will be given to the role of hormones in the modulation of gene expression during development. Mr. O'Connor

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

M226. Chromosome Structure and Regulation. (Same as Biological Chemistry M226, Chemistry M226, Microbiology and Immunology M226, and Microbiology M226.) Lecture, three hours. Prerequisite: consent of instructor. Lectures and panel discussions on the structural and functional organization of eukaryotic chromosomes. S/U grades are used for this course.

227. Chromosome Structure and Replication. Lecture, three hours. Prerequisite: course M132, Chemistry 153, 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. (½ course) Lecture, two hours. Prerequisite: consent of instructor. 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. Prerequisite: consent of instructor. 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. (½ course) (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 and the Staff

M230B. Structural Molecular Biology. (½ course) (Same as Chemistry M230B and Microbiology M230B.) Lecture, two hours; discussion, one hour. Prerequisites: Physics 6C, Mathematics 3C and consent of instructor. Selected topics from the following: principles of biological structure; structures of globular proteins and RNA's; 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.

M230C. Structural Molecular Biology Laboratory. (Same as Chemistry M230C and Microbiology M230C.) Laboratory, ten hours. Prerequisite: consent of instructor, based on a written research proposal. Laboratory; 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, the Staff

230D. Structural Molecular Biology Laboratory. (½ course) (Same as Chemistry M230D and Microbiology M230D.) Laboratory, ten hours. Prerequisite: course M230B concurrent. Methods in structural molecular biology, including experiments utilizing the following procedures: 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.

231. Advanced Topics in Molecular Biology. Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Each offering of the course will treat a different topic of current interest in molecular biology. The topic will be covered in depth at a level appropriate to advanced graduate students. The course will include lectures, discussion and presentations by students.
Mr. Brunk

232. Experimental Molecular Developmental Biology. (2 courses) Lecture, one hour; discussion, two hours; laboratory, twelve hours. Prerequisite: course 138, 144, and/or consent of instructor. A laboratory course in the biochemical expression and regulation of differentiation in eucaryotes.
Mr. Fessler, Ms. Lengyel, Mr. Tobin

233A-233B. Electron Microscopy of Cells. (2 courses each) Lecture, four hours; laboratory, twenty hours; demonstration, three hours. Prerequisite: consent of instructor. 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

234. Advanced Topics in Development. Lecture, three hours; discussion, one hour. Prerequisite: course 138 or equivalent. A 4-unit lecture course which will cover at an advanced level, special topics in areas such as: changes in gene activity during development, hormone action during development, cell commitment and differentiation, developmental genetics, plant development and developmental neurobiology. Ms. Lengyel and the Staff

235. Advanced General Physiology. Lecture, three hours. Prerequisite: course 158 or 161. Discussion of specific topics such as excitation, conduction, physiology of blood, muscle contraction, etc. Students will participate in giving reports.

236. Experimental Cell Biology. Lecture, two hours; discussion, one hour; laboratory, four hours. Prerequisites: course 158 and 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

M237. Steroid Hormones. (½ course) (Same as Biological Chemistry M237.) Lecture, two hours. Detailed examination of the mode of action of steroid hormones on both *in vivo* and *in vitro* systems. Topics will include steroid uptake, receptor purification & activation, and nuclear events among others. Previous courses in Biochemistry and Cell Biology are highly desirable. Mr. Coty, Mr. O'Connor

238. Structure, Function and Biogenesis of the Mitochondrion. Lecture, three hours. Prerequisites: course 158, Chemistry 22, and 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. Laboratory Techniques in Nucleic Acid Research. (2 courses) (Same as Microbiology M239.) Lecture, two hours; discussion, one hour; laboratory, twelve hours (open lab). Prerequisite: consent of instructor. Procedures in the manipulation of nucleic acids, including; isolation of DNA and RNA and physical and chemical characterization by several means; characterization of circular DNA molecules by electron microscopy, gradient centrifugation and restriction enzyme analysis; in vitro transcription and hybridization analysis. Mr. Nierlich, Mr. Simpson

240. Physiology of Marine Animals. (2 courses) *This course is given at the Santa Catalina Marine Biological Laboratory.* Lecture and laboratory studies on cellular, tissue, organ, and animal physiology; regulatory biology; metabolic characteristics of cells, energy transformations.

241. Laboratory in Advanced Electrophysiology. (2 courses) Laboratory, twelve hours. Prerequisites: course 172 or equivalent and consent of instructor. In-depth involvement in individual research projects under staff guidance. Approximately two projects each quarter. Course may be repeated twice.
Mr. Eckert, Mr. O'Lague

242. Topics in Neurobiology. Lecture, three hours. Prerequisites: course 171 or the equivalent and consent of instructor. Selected current problems in neurobiology will be 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 and consent of instructor. Qualified undergraduates may also enroll with consent of instructor. Physical properties of animal signals and the physiological mechanisms underlying their generation and reception will be considered. Lectures will 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 will be discussed, 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. Advanced laboratory. Mr. Engelmann

246. Plant Molecular Biology. Lecture, four hours. In-depth study of current issues in molecular biology as it pertains to plants. Subjects will include gene expression and organization, gene engineering, organellar structure and function, nitrogen fixation, plant viruses, and others. Students may repeat this course for multiple credit since the content will vary from year to year.
Mr. Goldberg, Mr. Thornber, Ms. Tobin

247A-247E. Advanced Plant Biology. Lecture and discussion, four hours. Prerequisite: consent of instructor. Some background in plant biology is recommended.

247A. Control of growth and development in plants. Ms. Tobin, Mr. Phinney

247B. Plant genetics. Mr. Goldberg

247C. Organelle development and function in plants. Ms. Gonzalez

247D. Photobiology. Mr. Thornber

247E. Plant metabolic pathways. Mr. Chapman

248. Laboratory Techniques in Plant Biochemistry. (½ course) Laboratory, six hours. Prerequisites: course 247 (taken concurrently) and Chemistry 152 or equivalent and consent of instructor. A laboratory course aimed at introducing graduate students to techniques used in plant biochemistry research. Limited enrollment. Mr. Chapman, Mr. Thornber

249. Biochemistry of Parasitism. Lecture, three hours. Biochemical and physiological aspects of parasite-host relationships. Mr. MacInnis

M250A-M250B. Advanced Immunology. (½ course each) (Same as Microbiology M258A-M258B and Microbiology and Immunology M258A-M258B.) Lecture, one hour; discussion, one hour. Prerequisites: comprehensive introductory course in immunology, such as Biology M185; undergraduate preparation in biochemistry, genetics, or molecular biology. Provides continuity between lecture topics and original research literature. Emphasis is placed both on development of an appreciation of the experimental foundations of current immunological concepts, and on directions of contemporary and future immunology research. Mr. Sercarz, Mr. Zighelboim

251. Seminar in Plant Systematics. (½ course)
Mr. Thompson

253. Seminar in Plant Structure. (½ course)
Mr. Phinney, Mr. D. Walker

254. Seminar in Plant Morphogenesis. (½ course)
Mr. Phinney, Mr. D. Walker

255. Seminar in Invertebrate Zoology. (½ course)
Mr. Morin, Mr. Muscatine

CM256. Human Genetics. (Same as Biomathematics M256.) 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 will focus on current questions in the fields of medical and human genetics, and the methodologies appropriate to answer such questions. Concurrent scheduling with Biomathematics CM156. Independent research project required. Concurrent scheduling with Biomathematics M156. Independent research project required. Mr. Merriam, Ms. Spence

257. Gene Manipulation: Genetic Engineering. Lecture, three hours. Prerequisite: course 144 or 138 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

258. Seminar in Ichthyology. Discussion, two hours. Prerequisite: course 111 or 112. Student presentations and discussion of specific topics in ichthyology. The theme will vary from year to year. May be repeated for credit. Mr. Buth

259. Seminar in Herpetology. Discussion, three hours. Prerequisite: course 113 or consent of instructor. Seminar in current approaches to herpetology. Main theme will vary from year to year in areas such as biogeography, ecology, behavior, environmental physiology. Mr. Gorman

260. Seminar in Biology of Terrestrial Vertebrates. (½ course) Mr. Bartholomew, Mr. Howell

M261. Seminar in Vertebrate Morphology. (½ course) (Same as Kinesiology M292D.) Prerequisite: course 110 or consent of instructors. Discussion of current problems in vertebrate morphology and evolution. Graded S/U. Ms. Peterson, Ms. Zernicke

262. Seminar in Vertebrate Paleontology. (½ course) Mr. Vaughn

263. Seminar in Population Genetics. (½ course) Discussion, two hours. Prerequisite: consent of instructor. Seminar on topics of current interest in population genetics: selectionist/neutralist, sociobiology, kin selection/group selection, speciation, etc. Mr. Taylor

264. Evolutionary Concepts, (½ course) 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. (½ course) Mr. Nobel

266. Seminar in Plant Ecology. (½ course) Mr. Cody, Mr. Thompson

268. Seminar in Population Biology. (½ course) Mr. Cody

269. Seminar in Animal Ecology. (½ course) Discussion, three hours. Prerequisite: consent of instructor. A seminar to discuss specific topics in animal ecology and related fields; designed for advanced graduate students.

270. Seminar in Environmental Physiology. (½ course) Mr. Bartholomew, Mr. Nagy

271. Seminar in Phycology and Mycology. (½ course) Lecture, two hours. Prerequisites: course 100 or equivalent and 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 eucaryote organisms. Evolutionary origin of chloroplasts. Mr. Chapman

272. Seminar in Marine Biology. (½ course) Mr. Gordon, Mr. Muscatine, Mr. Morin

274. Seminar on Animal Behavior. (½ course) Mr. Collias

275. Seminar on Behavior Research Problems. Lecture, three hours; laboratory, two hours. Prerequisite: course 130. Mr. Kavanau

276. Seminar in Molecular Genetics. (½ course) Graduate seminar will concentrate on a specific topic each quarter. Mr. Salser

277. Seminar in Genetics. (½ course) Mr. Ebersold, Mr. Merriam, Mr. Siegel

278. Seminar in Information Processing in Eukaryote Cells. (½ course) Discussion, three hours. Prerequisites: Chemistry 153, Biology 132, or equivalents; 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. (½ course) Prerequisite: consent of instructor. Graded S/U. Mr. Tobin

280. Seminar on Chromosome Structure and Replication. (½ course) Prerequisite: course 227. Current topics in the field of control and mechanism of DNA replication. Mr. Ray

281. Seminar in Molecular Biology. (½ course) Prerequisite: consent of instructor. Mr. Brunk, Mr. Fessler, Mr. Ray

282. Major Histocompatibility Complexes: Genetics, Biochemistry, and Biology. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: course M185 or equivalent; genetics; biochemistry. Lectures and discussion of key papers underlying our present concepts of MHC structure and function. Emphasis is on the murine MHC (H-2), but where appropriate and illustrative, the human MHC is discussed. Mr. Clark

283. Seminar on Topics in Cell Biology. (½ course) A discussion of various topics on the biology of eukaryotic cells. A different topic will be emphasized each year. The topics will include bioenergetics, motility, organelle DNA, membrane structure and function, oncogenic transformation, nuclear organization and function. Mr. Simpson

284. Seminar in Structural Macromolecules. (½ course) Lecture, one hour; discussion, three hours. Prerequisite: courses 138, 144, and/or consent of instructor. Indepth 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. (½ course) Discussion, three hours. Prerequisite: course 144 and/or consent of instructor. A detailed analysis of our current understanding of the structural and functional events occurring during protein synthesis. Mr. Lake

286. Seminar in Plant Development. (½ course) Lecture, one hour; discussion, two hours. Prerequisites: a course in plant physiology and at least one advanced undergraduate or graduate course in plant development or biochemistry, Chemistry 153 or equivalent. A graduate seminar that will concentrate on a specific topic in plant development each quarter. Mr. Phinney, Ms. Tobin

287. Seminar in Comparative Cell Physiology. (½ course) Mr. Cascarano, Mr. James

288. Seminar on Plant Cell Biology. (½ course) Prerequisite: course 162 is particularly recommended. Ms. Gonzalez

289. Seminar in Plant Physiology. (½ course) Mr. Laties

290. Seminar in Comparative Physiology. (½ course) Mr. Gordon, Mr. Narins

291. Seminar in Physiology and Biochemistry of Arthropods. (½ course) Mr. Engelmann

292. Seminar on Topics in Ultrastructure. (½ course)

294: Seminar on Current Aspects of Photosynthesis. (½ course) Mr. Chapman, Mr. Thornber, Mr. O'Lague

295. Seminar in Neurophysiology. (½ course) Mr. Eckert, Mr. O'Lague

297. Seminar in Molecular Endocrinology. (½ course) Ms. Szego

M298. Seminar in Current Topics in Molecular Biology. (½ course) (Same as Biological Chemistry M298, Chemistry M298, Microbiology M298, Microbiology and Immunology M298 and Molecular Biology M298.) Prerequisite: enrollment must be approved by the instructor and by the Graduate Adviser of the Interdepartmental Molecular Biology Ph.D., Committee. Each student enrolled conducts or participates in discussions on assigned topics. May be repeated for credit.

299. Seminar in Parasitology. (½ course) Mr. MacInnis

495. Preparation for the Teaching of Biology in Higher Education. (½ course) Prerequisites: Graduate Standing and consent of instructor. Study of problems and methodologies in teaching biology, which includes workshops, seminars, apprentice teaching, and peer observation. Graded S/U. Mr. D. Walker

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in graduate courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

The conduct of each of the courses listed below is supervised by a member of the faculty.

596. Directed Individual (or Tutorial) Studies. (½ to 2 courses)

596F. Directed Individual (or Tutorial) Studies. (½ to 2 courses) Directed individual (or tutorial) studies at the Santa Catalina Island Marine Laboratory.

597. Preparation for Comprehensive Examination for the Master's Degree or Qualifying Examination for the Ph.D. (½ to 2 courses) Prerequisite: consent of instructor. Course 597 may not be used to fulfill any course requirements for the Master's or Doctor's degrees, and is graded S/U.

598. Master's Thesis Research and Writing (½ to 2 courses).

599. Doctoral Dissertation Research and Writing. (½ to 2 courses)

Biomathematics

(Office, AV-611 Center for the Health Sciences)

Abdelmonem A. Afifi, Ph.D., *Professor of Biostatistics and Biomathematics.*

Virginia A. Clark, Ph.D., *Professor of Biostatistics and Biomathematics.*

Edward C. DeLand, Ph.D., *Adjunct Professor of Surgery and Biomathematics.*

[16]Wilfrid J. Dixon, Ph.D., *Professor of Biomathematics (Vice Chair of the Department) and Professor of Biostatistics and Psychiatry.*

Olive Jean Dunn, Ph.D., *Professor of Biostatistics and Biomathematics.*

Janet D. Elashoff, Ph.D., *Adjunct Professor of Biomathematics.*

Robert M. Elashoff, Ph.D., *Professor of Biomathematics and Biostatistics.*

[16]Donald J. Jenden, B.Sc., M.B., BS., *Professor of Pharmacology and Biomathematics.*

Robert J. Jennrich, Ph.D., *Professor of Mathematics, Biomathematics, and Biostatistics.*

Frank J. Massey, Ph.D., *Professor of Biostatistics and Biomathematics.*

Carol M. Newton, M.D., Ph.D., *Professor of Biomathematics (Chair of the Department) and Professor of Radiation Oncology.*

Arthur Peskoff, Ph.D., *Adjunct Professor of Biomathematics and Physiology.*

Michael E. Phelps, Ph.D., *Professor of Radiological Sciences and Biomathematics.*

M. Anne Spence, Ph.D., *Professor of Psychiatry and Biomathematics in Residence.*

Kenneth L. Lange, Ph.D., *Associate Professor of Biomathematics.*

Eli Engel, M.D., Ph.D., *Adjunct Assistant Professor of Biomathematics.*

Susan E. Hodge, D.Sc., *Assistant Professor of Biomathematics in Residence.*

Henry Huang, D.Sc., *Assistant Professor of Radiological Sciences and Biomathematics in Residence.*

Edward Korn, Ph.D., *Assistant Professor of Biomathematics in Residence.*

Elliot Landaw, M.D., Ph.D., *Assistant Professor of Biomathematics.*
Ping Yu Liu, Ph.D., *Assistant Professor Biomathematics in Residence.*

•

Fred Dorey, Ph.D., *Lecturer in Biomathematics.*
Alan B. Forsythe, Ph.D., *Computer Systems Designer, Department of Biomathematics, and Lecturer in Dentistry.*
MaryAnn Hill, Ph.D., *Senior Statistician.*
Nancy Mann, Ph.D., *Research Statistician.*
Gerald E. Metter, Ph.D., *Lecturer in Biomathematics.*
M. Ray Mickey, Ph.D., *Research Statistician.*
Noel Wheeler, Ph.D., *Lecturer in Biomathematics.*

Biomathematics relates to the biological domain, much as mathematical physics relates to the physical. It also seeks to develop theoretical and computational vehicles for moving basic research findings rapidly and effectively into medicine. The Department of Biomathematics offers course sequences in biomedical computation, modeling, and the relating of models to biomedical data and experimental strategies. The Department participates in the medical curriculum, and offers the M.S. and Ph.D., in Biomathematics. The following is a description of requirements for both degree programs.

Admission Requirements. 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 the applicant's 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 application forms, applicants 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: Chair, Graduate Admissions Committee, Department of Biomathematics, School of Medicine, UCLA, Los Angeles, California 90024.

Students are admitted to either program after they have achieved admission to the Graduate Division and have been approved by the departmental Graduate Admissions Committee.

Advising. All faculty are accessible to students for individualized instruction and informal counseling. Formal arrangements are as follows:

The departmental Advisory Committee confers with incoming students about their goals and prior preparation. It assigns each student a major adviser and possibly additional special advisers to aid in specific aspects of training. Students meet with their major advisers at least once a quarter. As soon as it is formed, a doctoral student's dissertation committee will replace the previous advisers. Dissertation committee membership must be approved by the Advisory Committee.

Assessments of progress are developed and reported to the Advisory Committee by the student's adviser(s) or dissertation committee on the basis of grades, research, the Written Comprehensive Examination, and personal observations on progress and ability.

Disqualification. Every effort will be made to admit students who have a high likelihood of completing the program and to provide them a supportive environment and the individualized instruction and research opportunities required to correct deficiencies and to aid their development into strong, independent biomathematical investigators. If unforeseen difficulties arise, the Advisory Committee will seek to guide the student to overcome them, recommending withdrawal if all else fails.

Appeals. A decision to appeal the Advisory Committee's recommendation must be directed to the Department Chair within two weeks. The Chair will then announce a special faculty meeting to discuss the appeal. The student and anybody he or she wishes to bring may participate in that meeting. Thereafter, a mail ballot to faculty will decide between the Advisory Committee's recommendation and the student's proposed alternative.

Factors considered in evaluating a student are biomathematical research aptitude, progress toward completing degree requirements, performance on the required examinations, and grades.

The 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, 202A, and 203 are required.

Thesis or Comprehensive Examination Plan

Thesis Plan. Students generally will be required to follow the Comprehensive Examination Plan. Permission to undertake a thesis plan must be given by the Advisory Committee, which must approve the thesis committee proposed by the student, as well as the student's 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 will cover material presented in the candidate's coursework. This will usually be the Written Comprehensive Examination for the doctoral program given during the summer, but in exceptional cases a special committee and written examination will be provided.

Time to Degree. A well-prepared student should be able to complete the degree within four full-time quarters.

500 Series Course Limitations. No more than two Biomathematics 596 courses may apply toward the required nine courses, and none may apply toward the graduate course requirement in Biomathematics.

The Ph.D. Degree

Major Fields or Subdisciplines. Each student will complete the requirements for a field of special emphasis in biology.

Courses. A course of study for each presently approved specialty field has been developed in consultation with the Graduate Adviser or an equivalently authoritative person in that field. It usually comprises course requirements for doctoral students in that field, with possible omission of some courses having primarily a laboratory orientation. Presently approved fields of special emphasis include genetics, immunology, neurosciences, pharmacology, and physiology. Others can be added in response to students' requests. The requirements for a new field or revisions in requirements for an existing field of special emphasis must be approved by the Department of Biomathematics' Curriculum Committee.

Examination. The student must pass the Written or Oral Comprehensive Examination offered in the field of emphasis to its doctoral students prior to the examination that advances them to candidacy.

Exceptions. Students entering with a Ph.D. in a biological field will be exempt from the above requirements. Students with an M.D. will be 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.

Course Requirements

Required Courses:

Biomathematics: 201, 202A, 203, 204, and 8 units chosen from 205, 206, M207, 208, 209.

Mathematics: Five graduate courses from an approved list, with two substitutions possible if especially appropriate to the student's research field. (Approval may be given by the Curriculum Committee at the time of a student's admission to the program, to count previous graduate courses for full or partial completion of this requirement.)

Biology: Courses required for the field of major biological emphasis.

Recommended courses:

Mathematics: By individual study or coursework, the student 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. Offerings in the School of Public Health are especially recommended.

Computer Methods: Students must be facile programmers and acquainted with numerical methods needed for their 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.

Other Requirements:

Training in Independent Research: Each student must take at least 4 units of research (Biomathematics 596) with a member of the Biomathematics Department each year prior to taking the Written Comprehensive Examination. As the student progresses, there will be an 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.

Training for Teaching: One teaching preceptorship (Biomathematics 596) is required of each student. The student participates fully in the planning and delivery of one course in Biomathematics, assisting the instructor in counseling students, preparing notes and other teaching aids, and assigning final grades. Under supervision of the instructor, he or she organizes and presents the lectures on at least one of the major course topics. The emphasis is on the course instructor's obligation to train the student in all aspects of preparing for and offering a course; this is not a service-oriented teaching assistantship.

With permission of the Advisory Committee, a student who does not plan to pursue an academic teaching career may substitute the following: For one quarter, the student participates at the level of one Biomathematics 596 course in the individual-instruction activities of a member of the Biomathematics faculty, — e.g., informal instruction of biomedical scientific collaborators, planning and guiding individual reading programs, developing and administering term projects in research.

Teaching Experience. Teaching experience is a requirement for the Ph.D. degree. See *Other Requirements.*

Written and Oral Qualifying Examinations.

Comprehensive Examination in Biomathematics. In Summer Quarter, the Department will offer a Written Comprehensive Examination to test the student's competence in biomathematics. Full-time students must take this at least by the end of two academic years of study, and part-time students, by the end of three.

Qualifying Examination in the Field of Major Biological Emphasis. This usually will be the regular comprehensive examination for doctoral students in that field that is taken prior to the examination that advances them to candidacy.

Oral Qualifying Examination. This examination, administered by the doctoral committee appointed by the Dean of the Graduate Division, will critically probe the quality, scope and feasibility of the student's proposed dissertation work. It will also explore the strength of the student's biomathematical, mathematical, and biological-biomathematical research in his or her intended area of expertise. The student advances to candidacy after passing this examination.

Doctoral Committee. The initial membership list of the doctoral committee should be approved by the Advisory Committee prior to submission to the Graduate Division for approval.

Final Oral Examination Following Completion of the Dissertation. A final oral examination is required of all candidates and is a defense of the dissertation, administered by the doctoral committee.

Time to Degree. A full-time student with no deficiencies upon admission should be able to complete the program in five years (15 academic quarters plus research and/or individual instruction during the summers).

*Graduate Courses

200. Research Frontiers in Biomathematics. (½ course) Prerequisite: consent of instructor. A series of presentations by the faculty on research frontiers in biomathematics.

201. Deterministic Models in Biology. Prerequisites: Linear algebra and differential equations. The conditions under which deterministic approaches can be employed are examined, and conditions where they may be expected to fail. Topics receiving special attention include compartmental analysis, enzyme kinetics, physiological control systems, and cellular/animal population models. Ms. Newton and the Staff

202. Fourier Analysis in Biology. Prerequisites: 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.

203. Stochastic Models in Biology. Prerequisite: Mathematics 150A or equivalent experience in probability. The mathematical description of biological relationships with particular attention directed 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

204. Biomedical Data Analysis. Prerequisite: consent of instructor. The quantity and quality of observations has been greatly affected by the present day extensive use of computers. The course is a problem-oriented study of the latest methods in statistical data analysis and their use for such arising laboratory and clinical research. Mr. Dixon

205. Electric Potential Problems in Membranes, Cells and Tissues. Prerequisites: differential equations and electrostatistics or consent of instructor. Review of electrostatistics; 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

206. Modeling of Cellular Systems. (½ course to 1 course) Prerequisite: People who can contribute either as biologists or theoreticians may attend. Expected performance will be based on each individual's background. Study of recently reported characterizations of differentiating systems, flow cytometry, etc. Deterministic, stochastic, and computer simulation models are developed from simple dividing systems through special cell populations. Biological assumptions, indications for various approaches, and relationships to laboratory research and clinical applications are emphasized. Ms. Newton

M207. Modeling in Genetic Analysis. (Same as Anthropology (M222R.) Prerequisites: Graduate Standing, Anthropology M222Q (formerly numbered M222C), or consent of instructor. Basic concepts of human genetics with emphasis on methods of computer-oriented genetic analysis. Topics include segregation analysis, genetic linkage, polygenic (quantitative) models, and population structure. Ms. Spence

208. Modeling and Analysis of Neuroelectric Data. For biologists (especially neuroscientists), but open to other science majors. Mathematical approaches for modeling and developing neural theory are applied to basic neurophysiological phenomena and neural models. Appropriate practical approaches are also presented.

209. Problems in Fluid and Electrolyte Management. (½ course) Prerequisites: biochemistry, physiology, FORTRAN equivalent. Principles of fluid and electrolyte balance and acid-base chemistry. We begin with a brief review of fluid and electrolyte metabolism and mechanisms of physiologic control with reference to the research literature. This is followed by development and demonstration of the principles for management of acute imbalance using computer-based patient simulation. Depending upon each student's interests, special topics will 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

210. Introduction to Biomedical Computation. Prerequisite: Graduate Standing. Basic concepts of data acquisition and machine computation, with special reference to biomedical applications.

213. Biomedical Laboratory Computing (Biomedical Minicomputing). Computational and data management problems encountered in the use of small digital computers for biomedical research are analyzed. Practical experience will be 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 will be used for experience in the direct processing of physiological data and in controlling laboratory experiments.

215. Advanced Biomedical Computation. Prerequisite: course 210 or equivalent programming experience. Biomedical computation enabling those having elementary FORTRAN programming to acquire skills applicable to biomedical research. Use of random-number generators, stochastic modeling, models with differential equations, package programs, specialized applications, interactive modeling on IMLAC graphics system. Individual term projects.

Ms. Newton and the Staff

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluations will be applied for graduates and undergraduates.

M216. Computer and Biomathematical Applications in Radiological Sciences. (Same as Radiological Sciences M216.) Prerequisites: course 210 and elementary calculus are recommended. Computer and Biomathematical methods will be presented that relate to dosimetry, treatment strategies, biological effects of radiation, and laboratory research in radiotherapy and radiobiology. Ms. Newton

230. Computed Tomography: Theory and Applications. Prequisites: 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. The course will cover basic principles of computed tomography (CT), various reconstruction algorithms, special characteristics of CT, physics in CT, and various biomedical applications.

M231. Special Topics: Statistical Methods for Categorical Data. (Same as Public Health M201E.) Prerequisites: Public Health 100B or 101B, Mathematics 150C or 152B or equivalent and consent of instructor. Statistical techniques for the analysis of categorical data; discussion and illustration of their applications and limitations.

M246. Probability Models and Statistical Methods in Genetics. (Same as Anthropology *2M222Q.) Lecture, three hours. Prerequisites: Graduate Standing, two quarters of statistics, Mathematics 3A, Anthropology 222P (formerly numbered 222A). (Formerly numbered M222B.) An introduction to probability models and statistical methods in genetics. Maximum likelihood methods for estimating genetics parameters will be introduced and discussed in detail. This course is a prerequisite for Anthropology 222R, (formerly numbered 222C). Mr. Read

CM256. Human Genetics. (Same as Biology CM256) 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 reading in the literature will focus on current questions in the fields of medical and human genetics and the methodologies appropriate to answer such questions. Concurrent scheduling with Biomathematics CM156. Independent research project required. Ms. Spence

M280. Computation Statistics. (Same as Mathematics M280.) Prerequisites: Mathematics 115 and 150A, 150B, 150C or the 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 loglinear models. Mr. Jennrich

M281. Survival Analysis. (Same as Public Health M201K). Prerequisites: PH 100C, Mathematics 150D or Mathematics 152B. Statistical Methods for the Analysis of Survival Data. A letter grade will be used.

295. Supervised Statistical/Biomathematical Consulting. Prerequisites: Consent of instructor; two graduate level courses (6 units) in biomathematics, biostatistics or applied statistics; experience using computer programs to manage and analyze data. Hands-on experience with data management, modeling, and statistical analysis problems in actual consulting in biomedical and other research areas. Development of skills in formulating analytic problems, choosing techniques, managing data, executing analyses, interpretation of results, and report preparation. S/U or letter grade.

Ms. Wheeler and Staff

401. Biomathematics. (½ course) An introduction to research design and statistical and mathematical methods in biomedical research. Special emphasis on tools for critically reading the medical literature. Illustration of computer use in data retrieval and scientific computation in advanced sections.

Individual Study and Research

596. Directed Individual Study or Research in Biomathematics. (½ to 3 courses) This course will serve for individual study on topics not yet covered by the offerings of the department. This course can be taken several times for credit when different topics are covered. A letter grade will be used.

Chemistry and Biochemistry

(Office, 3010 W.G. Young Hall)

Frank A. L. Anet, Ph.D., *Professor of Chemistry.*
Daniel E. Atkinson, Ph.D., *Professor of Biochemistry.*
Mario E. Baur, Ph.D., *Professor of Physical Chemistry.*
Kyle D. Bayes, Ph.D., *Professor of Chemistry.*
Paul D. Boyer, Ph.D., *Professor of Biochemistry.*
Orville L. Chapman, Ph.D., *Professor of Chemistry.*
Donald J. Cram, Ph.D., *Professor of Organic Chemistry.*
Richard E. Dickerson, Ph.D., *Professor of Biochemistry and Geophysics.*
David S. Eisenberg, Ph.D., *Professor of Chemistry and Molecular Biology.*
Mostafa A. El-Sayed, Ph.D., *Professor of Chemistry.*
Paul S. Farrington, Ph.D., *Professor of Chemistry.*
Christopher S. Foote, Ph.D., *Professor of Chemistry.*
William M. Gelbart, Ph.D., *Professor of Chemistry.*
M. Frederick Hawthorne, Ph.D., *Professor of Chemistry.*
Eric J. Heller, *Professor of Chemistry.*
Herbert D. Kaesz, Ph.D., *Professor of Chemistry.*
Daniel Kivelson, Ph.D., *Professor of Chemistry.*
Charles M. Knobler, Ph.D., *Professor of Physical Chemistry.*
William G. McMillan, Jr., Ph.D., *Professor of Physical Chemistry.*
John P. McTague, Ph.D., *Professor of Chemistry.*
Malcolm F. Nicol, Ph.D., *Professor of Physical Chemistry.*
Howard Reiss, Ph.D., *Professor of Chemistry.*
Verne N. Schumaker, Ph.D., *Professor of Biochemistry and Molecular Biology.*
Robert L. Scott, Ph.D., *Professor of Physical Chemistry.*
Roberts A. Smith, Ph.D., *Professor of Biochemistry.*
Robert V. Stevens, Ph.D., *Professor of Chemistry.*
Kenneth N. Trueblood, Ph.D., *Professor of Chemistry.*
Joan S. Valentine, *Professor of Chemistry and Biochemistry.*
John T. Wasson, Ph.D., *Professor of Geochemistry and Chemistry.*
Charles A. West, Ph.D., *Professor of Biochemistry (Chair of the Department).*
Francis E. Blacet, Ph.D., D.Sc., *Emeritus Professor of Chemistry.*
Clifford S. Garner, Ph.D., D.Sc., *Emeritus Professor of Chemistry.*
E. Russell Hardwick, *Emeritus Professor of Chemistry.*
Thomas L. Jacobs, Ph.D., *Emeritus Professor of Chemistry.*
James D. McCullough, Ph.D., *Emeritus Professor of Chemistry.*
Jay Gralla, *Associate Professor of Biochemistry.*
John M. Jordan, Ph.D., *Associate Professor of Biochemistry and Molecular Biology.*
Michael E. Jung, Ph.D., *Associate Professor of Chemistry.*
Jerome V. V. Kasper, Ph.D., *Associate Professor of Chemistry.*
Emil Reisler, *Associate Professor of Biochemistry and Molecular Biology.*
Charles E. Strouse, Ph.D., *Associate Professor of Chemistry.*
Richard L. Weiss, *Associate Professor of Biochemistry.*
Jeffery I. Zink, Ph.D., *Associate Professor of Chemistry.*
Steven G. Clarke, Ph.D., *Assistant Professor of Biochemistry.*
Harold G. Martinson, Ph.D., *Assistant Professor of Biochemistry and Molecular Biology.*
Joseph R. Murdoch, Ph.D., *Assistant Professor of Chemistry.*
Wayne J. Thompson, *Assistant Professor of Chemistry.*
R. Stanley Williams, *Assistant Professor of Physical Chemistry.*

•

Sandra I. Lamb, Ph.D., *Lecturer in Chemistry.*
Lawrence H. Levine, Ph.D., *Lecturer in Chemistry.*
Arlene A. Russell, M.S., *Lecturer in Chemistry.*

The Department of Chemistry and Biochemistry offers programs of study and research leading to the M.S. and Ph.D. degrees. Prospective candidates for advanced degrees may specialize in the following fields: biochemistry, inorganic, organic, or physical chemistry.

There is close cooperation between the Department of Chemistry and Biochemistry and the Department of Biological Chemistry in the School of Medicine, but a student must be formally admitted into the program of one department or the other.

The M.S. in Biochemistry may be obtained by the Thesis Plan or the Comprehensive Examination Plan. A student who is planning to work toward the Ph.D. should not seek to obtain a M.S. degree first, but should apply directly to the Ph.D. program. Application materials may be obtained by writing to Phyllis Jergenson, Director, Graduate Office, Department of Chemistry and Biochemistry, UCLA, Los Angeles, California 90024.

Admission Requirements. Excellent undergraduate record in addition to the University minimum requirements. Graduate Record Examination (GRE) Aptitude and Advanced Tests are recommended.

Advising. Phyllis Jergenson, Graduate Office, 4006 Young Hall.

Initial academic advising is handled by the appropriate Area Adviser. The student will continue to consult each quarter with this adviser until completion of his/her course requirements. During this period he/she will also choose a Research Director who will supervise the thesis research. The Graduate Study Committee, consisting of the Graduate Adviser and the Area Advisers, reviews each student's progress quarterly. Notification in writing is given to students performing at a very high level and to those who are not making adequate progress. Both the Graduate Adviser and Area Adviser are available for personal consultation.

Orientation Examinations. Each student admitted to graduate status is given orientation examinations at the beginning of the first quarter. Students write examinations in physical, organic, analytical, and inorganic or biochemistry. The main purpose of the orientation requirement is to help the student and his/her adviser plan his/her course program. The examinations include material covered in upper division courses in physical, organic, inorganic, and biochemistry. All courses suggested

because of deficiencies in undergraduate preparation are normally to be completed by the end of the first year.

Orientation to Research. Students are encouraged to become familiar with research activities of all faculty in their areas of interest and to join a research group as soon as possible. Biochemistry students will 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; *Organic*— German; *Physical*— (one of the following) German, French (with approval of the Research Director), substitute course program, coordinated course in computer programming; *Inorganic*— German or coordinated course in computer programming. (A foreign student in the M.S. program may use English as the required foreign language.) Either the ETS Examination (with score of 500) or the Departmental Examination is acceptable. The Departmental Examination requires translation of a journal article with the aid of a dictionary. 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 a S/U basis, but may not be used to fulfill the departmental requirements.

Course Requirements.

Chemistry (M.S.) At least nine quarter courses (36 units) are required, of which at least five (20 units) must be graduate courses and the remainder upper division courses. The student must take a minimum of two courses in his/her major area and one course in an outside area. Choices may be made from the following:

Organic: Chemistry 243A,B, 207, 232, 236, 241A-Z, 242, 244, 245, 246

Physical: Chemistry 215A,B,C,D, 223A,B,C, 225

Inorganic: Chemistry 174, 207, 275, 276A,B, 277, 279

Substitutions may be made with approval of the Area Adviser. With the consent of the Graduate Adviser, courses of directed individual study, but not research courses, may replace any of the courses listed above. Research courses may be used to complete the graduate level and total course requirements as follows:

500 Series Courses

Course No.	Unit Value	Type of Grading	No. Times May Be Repeated
596	2-16	S/U	No limit
598	2-16	letter	No limit

Up to 24 units of Chemistry 596 or 598 may be applied toward the total course requirement. Up to 20 units of Chemistry 596 or 598 may be applied toward the minimum graduate course requirement. In exceptional cases where Plan II (Comprehensive Examination) is used, an additional 6 units of 597 and 6 units of Student Seminar (Chem 218, 248, or 278) may apply toward the graduate course requirement and the total course requirement.

Biochemistry (M.S.) Plan I (Thesis). 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, M267. Registration in Chemistry 258 (Student Seminar) is required for three quarters, but is not applicable to the 36-unit requirement. Research courses may be used to complete the graduate level and total course requirement as follows:

500 Series Course Limitations

Course No.	Unit Value	Type of Grading	No. Times May Be Repeated
596	2-16	S/U	No limit
598	2-16	letter	No limit

Up to 22 units of Chemistry 596 or 598 may be applied toward the total course requirement. Up to 8 units of Chemistry 596 or 598 may be applied toward the graduate course requirement.

Thesis Plan. After completion of course requirements, the student consults with his/her Research Adviser and the Graduate Office to form a thesis committee. This committee consists of three members, with the Research Adviser as Chair. A member from outside the Department is permissible, but not required.

Chemistry. (M.S.) Plan II (Comprehensive Examination). 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, M267. Students using Plan II may apply 6 units of Chemistry 258 (Student Seminar) and 6 units of Chemistry 597 to the graduate level requirement and the total course requirement. With the exception of Chemistry 258 and 597, all courses must be taken on a graded basis.

500 Series Course Limitations

Course No.	Unit Value	Type of Grading	No. Times May Be Repeated
597	2	S/U	3

(Ph.D.) Candidates in each area of specialization should normally complete as a minimum the coursework indicated below. Note: Some of these requirements can be met on the basis of orientation examinations and courses taken prior to entry into the graduate program. A student whose projected research falls in an area which differs appreciably from that anticipated by the field requirements listed below may be permitted appropriate modifications.

Inorganic Chemistry

a) Required background material: Chemistry 173.

b) Two courses selected from 276A,276B, or 277.

c) Two courses selected from 174, 275, 207, or 279.

d) Two courses selected from physical chemistry 213B, 215A, 215B, 223A, 215D, or organic chemistry 241, 243A, 243B, 232, 242, 244, 245, 246 or biochemistry 157A.

e) Three courses selected from Chemistry 207, 271A-Z, 275, 276A.

f) Chem 278.

Organic Chemistry

a) Required background material: Chemistry 133A,B,C, 136, 144.

b) Chemistry 243A,B.

c) Chemistry 213B, 276A or 245.

d) One additional course selected from the following offerings in physical chemistry (215A, 223A, 221) *or* inorganic chemistry (173, 174, 275, 276A) *or* biochemistry (157A,B).

e) Two courses selected from Chemistry 207, 232, 236, 241A-Z, 242, 244, 245, 246.

f) Chemistry 248.

Physical Chemistry

a) Required background material: Chemistry 110A,B, 113A.

b) Chemistry 215A,B, 223A,B.

c) Two courses selected from Chemistry 215C, 215D, 221A-F, 223C, 225, Physics 131 (or approved substitutions).

d) Two additional courses from upper division or graduate offerings in chemistry or physics.

e) Chemistry 218.

Biochemistry *(Ph.D.).* Candidates should normally complete as a minimum the coursework indicated below. Note: Some of these requirements can be met on the basis of orientation examinations and courses taken previous to entry into the graduate program.

a) Required background material: Chemistry 110A, 133 A, B, C, 156, 157 A, B, some coursework in the life sciences and some biochemistry lab experience. Deficiencies in background may be made up after admission.

b) The core courses M253, M255, M267 (18 units).

c) An additional 12 units of upper division or graduate courses subject to the approval of the Graduate Adviser. It is recommended that 8 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 will normally not be applicable.

d) Chemistry 258 each quarter during the first two years.

Written Qualifying Examinations. In accordance with University requirements, each student in the Ph.D. program must pass a Written Qualifying Examination. Rather than a single comprehensive examination, the Department gives a series of written tests called Cumulative Examinations. These are designed to encourage and test the continued growth of professional competency by the student through coursework, study of the literature, attendance at, and participation in departmental seminars, and informal discussions with colleagues.

a) Three examinations are given per quarter at approximately monthly intervals.

b) The student who enters directly into the Ph.D. program and performs satisfactorily on the orientation examination in his/her special area may begin writing the examinations immediately. All students must begin by the start of their second quarter of residence, and *must continue until they have passed five.* To remain in good standing, a student 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, each student's overall progress will be evaluated by the Graduate Study Committee, taking into account performance in courses, cumulative examinations, and research. The student's Research Director will be consulted in borderline cases. The Committee may recommend that the student: 1) be qualified to proceed to the oral examination, 2) be placed on probationary status for one quarter, during which time he/she will continue to take cumulative examinations with a final determination made at the end of this period, 3) be disqualifed from the Ph.D. program, 4) be terminated.

Oral Qualifying Examination. This examination is based on a research proposal prepared by the candidate. The proposal should represent independent work on the student's part and should offer the doctoral committee an opportunity to judge his/her ability to think creatively and to formulate significant ideas for research. The Oral 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 express permission has been obtained from the Area Adviser. Prior to the examination, the student's Research Adviser is to prepare a thorough written evaluation of the candidate's research abilities, progress, and potential to present to the committee. The committee's decision to advance the student to candidacy, to allow him/her to repeat the oral, or to disqualify him/her will be based on the quality of the written proposal, the adequacy of the oral presentation, his/her overall record at UCLA as reflected in coursework and examinations, and his/her research ability.

Appointment of the Doctoral Committee. A doctoral committee, appointed with the approval of the Graduate Division, will conduct the Oral Qualifying Examination. This committee must consist of not fewer than five members, (six for biochemistry), two of whom must be from departments other than Chemistry and Biochemistry. At the end of a successful examination, the chair and members of the committee in consultation with the student shall determine which of its members will guide, read, approve and certify the dissertation. At least two members from the Chemistry Department and at least one outside member must act in this capacity. A decision is also made as to whether a Final Oral Examination will be required.

Advancement to Candidacy. When a satisfactory report on the completion of the Written and Oral Qualifying Examinations and the departmental language requirements has been submitted, the student will be mailed an application for advancement to candidacy. The filing of this application and payment of the fee constitutes formal advancement to candidacy for the Ph.D.

Candidate in Philosophy Degree. In conjunction with advancement to candidacy, a student may request award of the Candidate in Philosophy Degree. This is a non-terminal degree for which the academic criterion is advancement to candidacy for the Ph.D. Students who desire to teach in positions which do not require the extensive research experience usually associated with the Ph.D. may find this a reasonable alternative.

In-Candidacy Fee Offset Grant Program. Students who have been advanced to candidacy for the Ph.D. are eligible for this program and the attendant registration fee offset. *Students in the program must register each quarter until completion of all degree requirements, including filing of the dissertation.* The fee offset will be issued until departmental normative time-to-degree (17 quarters) is reached. Students who fail to complete their Ph.D. within this time frame may continue as students, subject to the regulations of the program, but will no longer be eligible for the fee offset. Unless a leave of absence has been approved, failure to register will result in lapse of status as a graduate student and Ph.D. candidate.

Time to Degree

Normal Progress Toward the Degree (M.S.)

	Academic Quarters	Calendar Years
From admission to completion of courses	3	1
From admission to award of degree	3-6	1-2

Normal Progress Toward the Degree (Ph.D)

	Academic Quarters	Calendar Years
From admission to completion of cumulative exams	3-6	1-2
From admission to advancement to candidacy	6-7	2-2.3
From admission to award of degree	12-17	4-5.6

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional with the doctoral committee.

Teaching Experience. One year of teaching experience is required. (No requirement for M.S. II).

Disqualification and Appeal of Disqualification. A student may be disqualified from the M.S. or Ph.D. program by action of the Graduate Study Committee for failure to maintain an adequate level of performance in coursework, in qualifying examinations, or in research progress. Appeal of disqualification may be made to the Department Chair.

Manuscript Preparation. Orientation meetings with the University Archivist are scheduled each quarter. A list of these dates is posted on the Graduate Office Bulletin Board. A booklet entitled *Standards and Procedures for Theses and Dissertations* is available free of charge from the Graduate Division, 1225 Murphy Hall. The student is required to submit two *unbound* copies of the manuscript to the Archivist and one *bound* copy to the Research Supervisor.

Final Clearance. Before the Department will give final approval to the Registrar for the formal granting of the degree, all appropriate clearances must be obtained by the student. Check-out cards are available in the Chemistry Graduate Office.

*Graduate Courses

207. Organometallic Chemistry. Lecture and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) 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.

213B. Physical Chemistry: Molecular Spectroscopy. Lecture and 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 transistions. An independent study project is required. Mr. Kasper, Mr. Bayes

C215A-215B. Quantum Chemistry: Methods. Lecture: four hours; discussion: one hour. Prerequisites: course 113A, Mathematics 31A, 31B, 32A, 32B, 33A (or 31C and 32C). 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 a prerequisite for course C215B. 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. Students entering course C215A will normally be expected to take course C215B the following quarter. These two courses are designed for chemistry students with a serious interest in quantum chemistry. May be concurrently scheduled with Chem C115A-C115B. Mr. Heller, Mr. Gelbart

215C. Advanced Quantum Chemistry: Applications. Lecture: four hours. Prerequisite: course 215B, 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.

215D. Molecular Spectra, Diffraction and Structure. Lecture and quiz, four hours. Prerequisite: course 215B, 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.

218. Physical Chemistry Student Seminar. (½ course) Seminars are presented by staff, outside speakers, postdoctoral fellows and graduate students. S/U grades are used for this course. May be repeated for credit.

---

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

221A-221Z. Advanced Topics in Physical Chemistry. (½ to 1 course each) Lecture, two to four hours. Prerequisite: consent of instructor. Each course will encompass a recognized specialty in physical chemistry, and will be taught by a staff member whose research interests embrace that specialty.

223A-223B. Chemical Thermodynamics. Lecture: four hours; discussion: one hour. Prerequisite: course 110B or 156 (113A recommended). 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, non-electrolyte and electrolyte solutions, surface phenomena, high polymers, gravitation. May be scheduled concurrently with Chem C123A-C123B. Mr. Knobler, Mr. Scott

223C. Statistical Mechanics. Lecture and quiz, four hours. Prerequisites: courses 215B, 223B, 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 quantigation.

225. Chemical Kinetics. Lecture and quiz, four hours. Prerequisites: courses 215A, 223A, 223B. Theories of chemical reactions and their applications to experimental systems; general kinetic postulates; theories of elementary reactions; energy transfer processes; experimental studies. Mr. Kasper (Sp)

M226. Chromosome Structure and Regulation. (Same as Biology M226, Biological Chemistry M226, Microbiology M226 and Microbiology and Immunology M226.) Prerequisite: consent of instructor. Lectures and panel discussions on the structural and functional organization of eukaryotic chromosomes. S/U grades are used for this course.

228. Chemical Physics Seminar. (½ course) Seminars will be presented by staff, outside speakers, postdoctoral fellows and graduate students. S/U grades are used for this course. May be repeated for credit.

M230A. Structural Molecular Biology. (½ course) (Same as Biology M230A and Microbiology M230A.) Lecture and discussion, three hours. 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. Eisenberg, Mr. Eiserling, Mr. Kasmatsu

M230B. Structural Molecular Biology. (½ course) (Same as Biology M230B and Microbiology M230B.) Lecture and discussion, three hours. Prerequisites: Physics 6C, Mathematics 3C and consent of instructor. Selected topics from the following: principles of biological structure; structures of globular proteins and RNA's; 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.
Mr. Eisenberg, Mr. Eiserling, Mr. Lake

M230C. Structural Molecular Biology Laboratory. (½ course) (Same as Biology M230C and Microbiology M230C.) Laboratory, ten 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. Eisenberg, Mr. Eiserling, Mr. Kasamatsu

M230D. Structural Molecular Biology Laboratory. (½ course) (Same as Biology M230D and Microbiology M230D.) Laboratory, ten hours. Prerequisite: course M230B concurrent. Methods in structural molecular biology, including experiments utilizing the following procedures: 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, Mr. Sweet

232. Stereochemistry and Conformational Analysis. Lecture and discussion, three hours. Prerequisite: course 143 (may be taken concurrently) or consent of instructor. Molecular symmetry, chirality, prochirality, stereochemistry in vinyl polymers, atropisomerism, diastereomeric interactions in solution, conformations of acyclic and cyclic molecules.

236. Spectroscopic Methods of Organic Chemistry. Lecture and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) or consent of instructor. Proton and carbon-13 nuclear magnetic resonance; photoelectron, ultraviolet, infrared, and Raman spectroscopy; optical rotatory dispersion and circular dichroism; mass spectrometry.

241A-241Z. Special Topics in Organic Chemistry. (½ to 1 Course). Lecture and discussion, two to four hours. Prerequisite: course 243A (may be taken concurrently), or equivalent, or consent of instructor. Each course will encompass a recognized specialty in organic chemistry, generally taught by a staff member whose research interests embrace that specialty.

242. Organic Photochemistry. Lecture and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) 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 133C (may be taken concurrently), 110B, 113A, or equivalent, with grade C– or higher, or consent of instructor. Mechanisms of organic reactions. Acidity and acid catalysis; linear free energy relationships; isotope effects. Molecular orbital theory; photochemistry; pericyclic reaction. May be scheduled concurrently with Chemistry C143A.
Mr. Chapman

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 scheduled concurrently with Chemistry C143B.
Mr. Chapman, Mr. Stevens

244. Strategy and Design in Organic Synthesis. Lecture and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) 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 and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) 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; the estimation of through-bond and through-space interactions; an introduction to photoelectron spectroscopy; related special topics.

246. Bio-Organic Chemistry. Lecture and discussion, three hours. Prerequisite: course 243A (may be taken concurrently) 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. (½ course) Seminars in organic chemistry and related areas will be presented by outside speakers, department faculty, and postdoctorals and graduate students. S/U grades are used for this course. May be repeated for credit.

248. Organic Chemistry Student Seminar. (½ course) Seminars are presented by staff, outside speakers, postdoctoral fellows and graduate students. S/U grades are used for this course.

249. Problems in Advanced Organic Chemistry. (½ course) Problems in organic reaction mechanisms, synthesis, structure determination, stereochemistry, spectroscopy, electronic theory, photochemistry, and organometallic chemistry are discussed, with an emphasis on current literature. Intended primarily for first and second year graduate students as preparation for cumulative exams. S/U grades are used for this course. May be repeated for credit.

250. Topics in the Biochemistry and Molecular Biology of Animal Cells. Lecture, three hours. Prerequisites: equivalent of Intermediate Organic Chemistry, Chemistry 157A, 157B and courses in Genetics and Molecular Biology. Enrollment by permission of the instructor. The course will consider the 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 eucaryotic cells, biochemistry of tissue development and organization. Mr. Jordan and invited speakers

251A-251Z. Advanced Topics in Biochemistry. (½ course) Lecture, two hours. Prerequisite: consent of instructor. Each course will encompass a recognized specialty in biochemistry, and will be taught by a staff member whose research interests embrace that specialty.

M253. Macromolecular Structure. (1½ courses) (Same as Biological Chemistry M253.) Lecture and quiz, four hours. Prerequisites: course 110A, 156, 157A-157B or Biological Chemistry 101A-101B or 201A-201B or equivalent. Chemical and physical properties of proteins, nucleic aids and other macromolecular complexes with emphasis on theory and methodology; correlation of structure and biological properties; chemical synthesis and properties of polypeptides and polynucleotides.

254. Advanced Biochemical Methods. Lecture and quiz, two hours; laboratory, eight hours. Prerequisite: course 156, 157A-157B recommended (may be taken concurrently), or consent of instructor. Theoretical and practical basis of metabolic, chromatographic, kinetic, electrophoretic, ultracentrifugal, isotopic and other techniques as applied to biochemical systems.
Mr. Eisenberg, Mr. Schumaker (W)

M255. Enzymes, Metabolism and Regulation. Lecture, five hours. Thermodynamic and kinetic aspects of metabolism regulatory properties of enzymes; metabolic regulation; consideration of comparative aspects of metabolism in relation to physiological function; and enzymic mechanisms and methods for their study.

M257. Physical Chemistry of Biological Macromolecules. (½ course) (Same as Biological Chemistry M257.) Lecture, two hours. Prerequisite: course 22 and 110A. Theory of hydrodynamic, thermodynamic, optical and x-ray techniques used to study the structure and function of biological macromolecules.
Mr. Schumaker (F)

257L. Hydrodynamic and Optical Characterization of Biopolymers. Lecture, two hours; laboratory, eight hours. Prerequisite: course M257 completed or concurrent. A laboratory course covering a variety of hydrodynamic and optical techniques, and including an individual project dealing with: sedimentation velocity, sedimentation equilibrium, buoyant density gradient centrifugation, capillary and rotating cylinder viscometry, circular dichroism, or intensity fluctuations of scattered laser light.

258. Biochemistry Student Seminar. (½ course) Seminars are presented by graduate students on topics of current biochemical interest. S/U grades are used for this course. May be repeated for credit.

259. Mechanisms in Regulation of Transcription. Lecture, three hours. Prerequisite: one of the following courses, 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.

M261. Advanced Chemistry and Biochemistry of Lipids. (½ course) (Formerly numbered Biological Chemistry 261 and same as Biological Chemistry M261.) Lecture, two hours. Prerequisites: Biological Chemistry 101A-101B or 201A-201B, Chemistry 157A-157B or equivalent. Knowledge of elementary chemistry and biochemistry of lipids essential. The biochemistry of lipids including chemical and physical characteristics of lipids and their metabolism. Mr. Howton, Mr. Mead, Mr. Popjak

262. Biological Energy Transductions. Prerequisite: course M253. 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.

M264. Molecular Basis of Atherosclerosis. (½ course) (Same as Biological Chemistry M264 and Microbiology M264.) Lecture, two hours. Prerequisite: course M261 or equivalent with consent of instructor. The course will cover the biochemistry, morphology and physiology of atherosclerosis. Emphasis will be placed on the chemistry of lipoproteins and the role of plasma lipoproteins on the regulation of tissue lipid metabolism and the development of atherosclerosis.

268. Seminar in Techniques for the Study of Gene Regulation. (½ course) Prerequisite: course 259 or consent of instructor. A seminar to discuss specific experimental approaches being taken in the study of gene regulation. Emphasis will be on the specific biochemical techniques being used to study regulatory protein-DNA interactions in diverse biological model systems.

M267. Macromolecular Metabolism and Subcellular Organization. (1½ courses) (Same as Biological Chemistry M267.) Lecture, two hours. Prerequisites: course 157A-157B or Biological Chemistry 101A-101B or 201A-201B or equivalent; Recommended: Biological Chemistry M253 or Chemistry M253. Metabolism of nucleic acids and proteins; biosynthesis of complex lipids and polysaccharides; structure and properties of cellular organelles. Mr. Zabin

268. Biochemistry Research Seminar. (½ course) Seminars are presented by staff, outside speakers, postdoctoral fellows and graduate students on topics of current biochemical research interest. S/U grades are used for this course. May be repeated for credit.

M269. Developmental Biochemistry. (½ course) (Same as Biological Chemistry M269.) Prerequisite: course M267 or consent of instructor. This course will deal with the 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 will be studied as they contribute to such topics as hormone induction, morphogenesis and viral transformation. Emphasis will be placed on the use of differentiating *in vivo* systems and cell culture as models.

271A-271Z. Advanced Topics in Inorganic Chemistry. (½ to 1 course each) Lecture, two to four hours. Prerequisite: consent of instructor. Each course will encompass a recognized specialty in inorganic chemistry, and will be taught by a staff member whose research interests embrace that specialty.

C275. Inorganic Chemistry: Reaction Mechanisms. Lecture and quiz, three hours. Prerequisites: courses 110A, 110B and 113A, 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 scheduled concurrently with Chemistry C175. Mr. Hawthorne

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 scheduled concurrently with Chemistry C176A. Mr. Strouse, Mr. Zink

276B. Physical Methods for the Characterization of Inorganic Compounds. *Lecture, three hours.* Prerequisite: course 276A or consent of the instructor. Applications of spectroscopic techniques including IR, Raman, visible, UV, NMR, ESR, and NQR to the elucidation of structure and bonding in inorganic and organometallic compounds. Mr. Strouse (W)

278. Inorganic Chemistry Student Seminar. (½ course) Seminars are presented by staff, outside speakers, postdoctoral fellows and graduate students. S/U grades are used for this course. May be repeated for credit.

279. Bioinorganic Chemistry. Lecture, three hours. Prerequisites: Chemistry 110A and *either* Chemistry 156 *or* Chemistry 173. The role of metal ions in biology; introduction to metalloenzymes and metalloproteins; metal ion interactions with nucleic acids; metal ion metabolism. J. Valentine

Individual Study and Research

596. Directed Individual Study or Research. (½ to 4 courses) To be arranged with the member of the faculty who will direct the study or research. Graded on a S/U basis. May be repeated for credit.

597. Preparation for the Doctoral Qualifying Examination or the Master's Comprehensive Examination. (½ to 1 course) Prerequisite: consent of the Chemistry graduate adviser. Graded on a S/U basis.

598. Research for and Preparation of the Master's Thesis. (½ to 4 courses) Each member of the faculty supervises research of master's students and holds research group meetings, seminars, and discussions with the students that take his master's research course.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 4 courses) Each member of the faculty supervises research of doctoral students and holds research group meetings, seminars, and discussion with the students that take his doctoral research course.

Classics

(Office, 7349 Bunche Hall)

Philip Levine, Ph.D., *Professor of Classics.*
Bengt T.M. Lofstedt, Ph.D., *Professor of Mediaeval Latin, Chair of Department.*
Jaan Puhvel, Ph.D., *Professor of Classics and Indo-European Studies.*
Milton V. Anastos, Ph.D., *Emeritus Professor of Byzantine Greek and History.*
Paul A. Clement, Ph.D., *Emeritus Professor of Classics and Classical Archaeology.*
Albert H. Travis, Ph.D., *Emeritus Professor of Classics.*
Ann L.T. Bergren, Ph.D., *Associate Professor of Classics.*
Bernard Frischer, Ph.D., *Associate Professor of Classics.*
Michael W. Haslam, Ph.D., *Associate Professor of Classics.*
Steven Lattimore, Ph.D., *Associate Professor of Classics and Classical Archaeology.*
David L. Blank, Ph.D., *Assistant Professor of Classics.*
Andrew R. Dyck, Ph.D., *Assistant Professor of Classics.*
Thomas N. Habinek, Ph.D., *Assistant Professor of Classics.*
Katherine C. King, Ph.D., *Assistant Professor of Classics and Comparative Literature.*
Helen C. Caldwell, M.A., *Senior Lecturer in Classics, Emeritus.*
Evelyn Venable Mohr, M.A., *Senior Lecturer in Classics, Emeritus.*
Barbara E. Killian, M.A., *Lecturer in Classics, Emeritus.*

The Master of Arts Degree

Admission Requirements. 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.) with 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; 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 of Classics uses the same application as Graduate Admissions, which may be obtained from the Department (7349 Bunche Hall) or Graduate Admissions (1247 Murphy Hall).

Advising. All students in the M.A. programs are supervised by the Graduate Adviser, a member of the regular departmental faculty: for 1982-83, Andrew R. Dyck, 7361 Bunche Hall. All students are *required to consult* the Graduate Adviser (or the Department Chair when the Graduate Adviser may be unavailable) at the beginning of each quarter to plan their programs, and as needed to discuss changes in programs, notify of plans for examinations, or consult about difficulties. At the end of each academic year, the Graduate Adviser conducts a review of all graduate students at a full departmental faculty meeting. The results of the review are recorded in the departmental minutes, and the substance of the evaluation of each individual student is communicated in writing to that student by the Graduate Adviser within 30 days.

Major Fields or Subdisciplines. The Department of Classics 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, the

student must demonstrate proficiency in German, French, or Italian during the 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, with 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 (Advanced Prose Composition), one course apiece from the Greek 200A-B-C and Latin 200A-B-C series (History of Greek/Latin Literature), and one course in the 201-229 series in each language. The three remaining courses are to be chosen in consultation with the Graduate Adviser from the upper division and graduate courses offered by the UCLA Classics 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 of these be graduate courses. For the Greek M.A., these must include Greek 210, two courses from the Greek 200A-B-C series, one course from the Greek 201-229 series, three additional upper division or graduate Greek courses, and two additional upper division or graduate courses to be chosen in consultation with the Graduate Adviser. The Latin M.A. course requirements are identical except for the substitution of Latin for Greek courses.

Thesis or Comprehensive Examination Plan. The Department of Classics follows the Comprehensive Examination Plan for the M.A. degrees. Before presenting themselves for the examination, students 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.) and, where a choice is permitted, to indicate which works they have read. Copies of the reading lists are issued to new graduate students and available to graduate students and applicants at all times. Substitutions to works on the reading lists may be made with the approval of the Department's regular faculty. The examinations consist of a 2-hour written examination on sight translations from Greek and on prepared texts from the Greek reading list (for the Classics and Greek M.A.); a 2-hour written examination on sight translations from Latin and on prepared passages from the Latin reading list (for the Classics and Latin M.A.); a 2-hour written examination on 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, and students who intend to take examinations during that quarter are requested to notify the Graduate Adviser well in advance. The examination committee, consisting of two members of the Classics faculty, is appointed by the Graduate Adviser. The Graduate Adviser may also serve as a member of the committee, especially when the two members are unable to reach an agreement. Possible grades on the examinations are Pass with Distinction, Pass, or Fail. All examinations may be repeated once; in exceptional cases and with the approval of the departmental faculty, more than once.

Time to Degree. A full-time student (i.e., one taking at least two courses per quarter) is expected to finish the M.A. degree within six quarters. Students normally take only one course when serving as teaching assistants, and progress towards the degree is accordingly apt to be slower in proportion to the amount of teaching undertaken.

500 Series Course Limitations. No more than one 596 course may count towards the fulfillment of the M.A. course requirement.

Disqualification. Conditions which may lead to termination include failure to maintain a grade point average above 3.0, insufficient progress towards the degree, or failure of M.A. examinations. A student deemed deficient in any of these respects by the departmental faculty is notified by the Graduate Adviser that failure to improve or correct deficiencies during the following quarter will lead to termination.

Appeals. On being notified subsequently of termination, the student may petition to the departmental faculty for reconsideration and may similarly petition to retake an examination after failing it twice.

The Ph.D. Degree

Admission Requirements. In addition to the M.A. degree (see below), the Department of Classics requires a statement of purpose; from students without a UCLA M.A., also 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 of Classics uses the same application form as Graduate Admissions, which may be obtained from the Department (7349 Bunche Hall) or Graduate Admissions (1247 Murphy Hall).

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 and require the candidate to pass with distinction, during the first year of residence, a set of examinations identical with the M.A. comprehensive examinations which may normally be repeated once.

Advising. All new students in the doctoral program are required, at the beginning of each quarter, to consult the Graduate Adviser, Professor Andrew R. Dyck, who assists in planning the program of study and guides the student towards the choice of an individual adviser as research interests dictate. After the Written Qualifying Examinations have been completed, the individual adviser takes responsibility for the guidance of the student, who must nevertheless continue to submit each quarter's study list for the Graduate Adviser's approval. The individual adviser is responsible for the establishment of the doctoral committee.

Major Fields or Subdisciplines. The UCLA Department of Classics 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, Mediaeval 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, the student is required to demonstrate proficiency in either French (Italian may be substituted with the permission 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. For German and French, the examination is the standard Educational Testing Service (ETS) reading examination, with a minimum score of 500; for Italian, a written translation examination is administered by the Department.

Course Requirements. At least one full year of graduate study (normally eight to nine courses) is required as preparation for the qualifying examination. The student 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; students specializing in Classical Literature and Philology may concentrate on Greek or Latin as their research interests dictate. Students entering with a UCLA Greek M.A. or the equivalent must take, in addition, Latin 210 (Advanced Prose Composition), one course from the Latin 200A-B-C series (History of Latin Literature), and one course from the Latin 201-229 series if they have not previously taken these courses; students entering with a UCLA Latin M.A. or the equivalent must satisfy identical course requirements in Greek.

Written and Oral Qualifying Examinations. Before presenting themselves for the Qualifying Examinations, students must complete the departmental Ph.D., reading list in either Greek or Latin authors, which is additional 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, and students entering with the Latin M.A. must complete the Greek M.A. reading list. Students are advanced to candidacy as a result of successfully taking the Qualifying Examinations, which consist of: a 3-hour written translation examination on Greek or Latin passages partly from the reading list and partly at sight; for students with the Greek or Latin M.A. only, a similar additional 3-hour examination on the Latin or Greek reading list; a 3-hour written examination on the area of specialization, with special emphasis on the student's research interests within that area; an oral examination covering both the area of specialization, with some emphasis on the student's proposed dissertation topic, and the general field of Classical studies. The oral examination is administered by the doctoral committee under the supervision of the student's individual adviser. Each examination may normally be repeated once.

Doctoral Committee. The Department of Classics imposes no conditions additional to those of the Graduate Council.

Final Oral Examination Following Completion of the Dissertation. 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.

Time to Degree. A full-time student with no deficiencies on admission to graduate status might be expected to complete the Ph.D. degree within nine quarters after entry into the doctoral program. Students normally take only one course when serving as teaching assistants, and time to degree is thus longer in proportion to the amount of teaching undertaken.

Candidate in Philosophy Degree. Students receive the C.Phil. degree on advancement to candidacy for the Ph.D. degree.

Disqualification. Conditions which may lead to termination include failure to maintain a grade point average above 3.0, insufficient progress towards the degree, or failure of Qualifying Examinations. A student deemed deficient in any of these respects by the departmental faculty is notified by the Graduate Adviser that failure to improve or correct deficiencies during the following quarter will lead to termination.

Appeals. On being notified subsequently of termination, the student may petition to the departmental faculty for reconsideration and may similarly petition to retake an examination after failing it twice.

Classics

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 second and first 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

248. 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. Graeco-Roman architecture. Mr. Lattimore

251C. Seminar in Classical Archaeology. Graeco-Roman sculpture. Mr. Lattimore

251D. Seminar in Classical Archaeology. Graeco-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. Seminar in Roman Religion. Prerequisite: consent of instructor.

268. Seminar in Comparative Mythology. Prerequisite: course 168 and 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. Reading, research and discussion of selected topics from Greek and Roman Literature. May be repeated for credit.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses)

597. Study for the M.A. Comprehensive Examination or the Ph.D. Qualifying Examination. (½ to 2 courses)

599. Research for the Doctoral Dissertation. (½ to 2 courses)

Greek

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 the independent reading of Greek texts in the original. Ms. Bergren, Mr. Haslam, Ms. King

201A-201B. Homer: *The Iliad.* Ms. Bergren, Mr. Haslam, Ms. King

202A-202B. Homer: *The 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. Haslam

206A-206B. Sophocles. Ms. Bergren, 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

210. Advanced Greek Prose Composition. Prerequisite: course 110 or the equivalent. Mr. Haslam

211A-211B. Herodotus. Ms. Bergren

212A-212B. Thucydides. Ms. Bergren, Mr. Haslam, Mr. Lattimore

213. Seminar in Greek Historiography.

214. Demosthenes. Mr. Dyck

215. Early Greek Orators. Studies in the works of Antiphon, Andocides, and Lysias. Mr. Dyck

216. Menander. Prerequisite: a reading knowledge of Classical Greek is required. Mr. Frischer

217A. Greek Lyric Poetry: Archaic Lyric. (Formerly numbered 217). Prerequisite: consent of instructor. A study of lyric poetry of the archaic period, both choral and monodic; elegiac and iambic included. Mr. Haslam, Ms. Bergren.

217B. Greek Lyric Poetry: Pindar and Bacchylides. (Formerly numbered 217.) Prerequisite: consent of instructor. A study of the choral odes of Pindar and Bacchylides, with especial attention to the conventions of the epinician. Mr. Haslam, Ms. Bergren

221. Seminar in the Presocratic Philosophers. Mr. Frischer

222A-222B. Plato. Ms. Bergren

223A-223B. Aristotle. Mr. Dyck, Mr. Frischer

224. Seminar in Post-Aristotelian Philosophy. Mr. Frischer

230. New Testament Greek. The Greek New Testament, as a work of Greek literature, with special emphasis on the information it gives about the culture on the whole, and the language in particular, of the society for which it was produced.

231A-231B-231C. Seminar in Later Greek and Byzantine Literature. Prerequisite: consent of instructor. Studies in various aspects of Byzantine Greek language and literature; subject treated varies from year to year; course need not be taken in A-B-C sequence and may be repeated for credit with contents changed. 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 covers the linguistic history of Classical Greek. In 240B Post-Classical, Mediaeval, and Modern Greek are discussed. 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. Prerequisite: consent of instructor (some reading knowledge of Greek required). 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.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses)

597. Study for the M.A. Comprehensive Examination or the Ph.D. Qualifying Examination. (½ to 2 courses)

599. Research for the Doctoral Dissertation. (½ to 2 courses)

Latin

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 the independent reading of Latin texts in the original. Mr. Frischer, Mr. Levine

201. Seminar in the Roman Epic: Ennius to Silius Italicus. The fragments of Ennius and selected readings from the minor epic poets (Lucan, Valerius Flaccus, Statius, Silius Italicus). Ms. Bergren

202. Seminar in Catullus. A detailed consideration of the entire Catullan corpus. Ms. Bergren, Mr. Levine

203A. Elegiac Poetry. Mr. Frischer, Mr. Levine

203B. Propertius. Mr. Levine

204A-204B. Vergil's Aeneid. Mr. Haslam, Ms. King

205. Seminar in Vergil's Bucolics. Mr. Frischer

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 interest centered on language and meter. Ms. Bergren, Mr. Löfstedt

208. Ovid. Prerequisite: a reading knowledge of Classical Latin is required. A detailed study of the poetic works of Ovid: readings in the original with discussion of the secondary literature and scholarship. The course may be repeated for credit as the content varies. 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. The choice of author may vary 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 the 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. (Formerly numbered 224.) Works such as Petronius *Satyricon* and Apuleius *Metamorphoses:* a study of the literary problems. The course may be repeated for credit as the content varies. Ms. Bergren

220A. Cicero's Rhetorical Works. Mr. Dyck

220B. Cicero's Orations. Mr. Dyck

221A. Cicero's Philosophical Works. Mr. Dyck, Mr. Levine

221B. Cicero: De Natura Deorum. Mr. Dyck, Mr. Frischer, Mr. Levine

222. Seminar in Roman Stoicism. Prerequisite: a reading knowledge of Greek and Latin. Mr. Dyck, Mr. Frischer

223. Lucretius. Mr. Frischer

225. Lucan. A detailed study of Lucan, *Bellum Civile:* readings in the original, discussion and reports on important literary and historical aspects.

231A-231B. Seminar in Mediaeval Latin. Prerequisite: at least one upper division course in Latin or consent of instructor. Studies in various areas of the language and literature of Mediaeval Latin. With instructor's permission, may be repeated for credit. 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

244. Seminar in Textual Criticism. Studies in the preparation of a critical edition of a Latin author.

Professional Courses in Method

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. (½ course) Prerequisite: current service as a teaching assistant and consent of instructor. Methodology of instruction, in conjunction with classroom practice.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses)

597. Study for the M.A. Comprehensive Examination or the Ph.D. Qualifying Examination. (½ to 2 courses)

599. Research for the Doctoral Dissertation. (½ to 2 courses)

Related Courses in Other Departments

Ancient Near East (Near Eastern Languages) 170. Introduction to Biblical Studies.

171. Old Testament: Hebrew and Septuagint Texts.

272. Semitic Background of the New Testament.

Art 103A. Greek Art.

103B. Hellenistic Art.

103C. Roman Art.

222A-222B. Greco-Roman Art.

History 115A-115B-115C. History of the Ancient Mediterranean World.

116A-116B-116C. History of Ancient Greece.

117A-117B-117C. 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.

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.

Comparative Literature (Interdepartmental)

Arnold J. Band, Ph.D., *Professor of Hebrew and Comparative Literature.*
Pier-Maria Pasinetti, Ph.D., *Professor of Italian and Comparative Literature.*
Ross P. Shideler, Ph.D., *Professor of Scandinavian Languages and Comparative Literature. (Chair of the Program).*
Katherine C. King, Ph.D., *Assistant Professor of Classics and Comparative Literature.*
Kathleen L. Komar, Ph.D., *Assistant Professor of German and Comparative Literature.*
Lucia Re, Ph.D., *Assistant Professor of Italian and Comparative Literature.*

•

Michael J.B. Allen, Ph.D., *Professor of English.*
Ehrhard Bahr, Ph.D., *Professor of German.*
Amin Banani, Ph.D., *Professor of Persian and History.*
Daniel G. Calder, Ph.D., *Professor of English.*
Marga Cottino-Jones, Ph.D., *Professor of Italian.*
Hassan El Nouty, Docteur es Lettres, *Professor of French.*
Eric Gans, Ph.D., *Professor of French.*
Kenneth Harper, Ph.D., *Professor of Slavics.*
Claude L. Hulet, Ph.D., *Professor of Spanish and Portuguese.*
Carroll B. Johnson, Ph.D., *Professor of Spanish.*
Murray Krieger, Ph.D., *University Professor of English.*
Richard D. Lehan, Ph.D., *Professor of English.*
Gerardo Luzuriaga, Ph.D., *Professor of Spanish.*
Vladimir Markov, Ph.D., *Professor of Slavics.*
Maximillian E. Novak, D. Phil., Ph.D., *Professor of English.*
Joseph N. Riddel, Ph.D., *Professor of English.*
Stephen I. Yenser, Ph.D., *Professor of English.*
Ben Befu, Ph.D., *Associate Professor of Oriental Languages.*
Albert Braunmuller, Ph.D., *Associate Professor of English.*
Frederick L. Burwick, Ph.D., *Associate Professor of English.*
Edward I. Condren, Ph.D., *Associate Professor of English.*
Michael Heim, Ph.D., *Associate Professor of Slavics.*
Albert D. Hutter, Ph.D., *Associate Professor of English.*
Robert M. Maniquis, Ph.D., *Associate Professor of English.*
Stephen D. Werner, Ph.D., *Associate Professor of French.*
Shuhsi Kao, Ph.D., *Assistant Professor of French.*
Romey T. Keys, Ph.D., *Assistant Professor of English.*

The Master of Arts Degree

Admission Requirements. For entrance into the program, a B.A. in literature, ancient or modern, is a prerequisite. Students not having a literature major in their B.A. program will be 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. All applicants for admission must take the Graduate Record Examination. Three letters of recommendation

are required. Applicants should have literary proficiency in one foreign language and at least an elementary knowledge of a second.

Advising. Graduate advisers are: Professor Arnold J. Band, Professor Katherine C. King, Professor Kathleen L. Komar, Professor Lucia Re, and Professor Ross P. Shideler. They can be contacted at the Comparative Literature Program office, 334 Royce Hall.

Students are assigned advisers for their first year, then changes are made to suit the student's program of study. Students' records are reviewed on a regular basis by the core committee of the Comparative Literature Program. Any student falling below a 3.4 grade point average is sent a warning by the Chair and may be placed on probation.

Students should meet at least quarterly with their advisers. Records are kept of these meetings.

Areas of Study for the M.A Degree. The student's study plan should combine the work in the major and minor literatures by focusing on a limited area in which these literatures may be fruitfully 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 the student's primary concentration. He/she specializes in one historically defined period (e.g., Medieval, Renaissance and Baroque, Neo-classicism and 18th century, Romanticism to Modern), but a general knowledge of the major literature is a prerequisite for the specialization.

In the minor literature, the student focuses on a period comparable to the area of specialization in the major literature. However, it is assumed that the student may not have as much historical depth and breadth in the minor literature as in the major.

Foreign Language Requirements. Literary proficiency in the major and minor literatures is an essential prerequisite for courses and degrees in Comparative Literature. Students are expected to be able to take graduate classes conducted in the languages of their specialization. The candidate should also be able to speak the major foreign language adequately and read literary texts in that language with "literary proficiency," i.e., with sensitivity to stylistic nuances.

Before completion of the M.A., the student must demonstrate a knowledge of two foreign languages. Proficiency in one of these languages must be certified by completion of two or more upper division and/or graduate literature courses in the appropriate language department. (Students must prove more than elementary language competency in order to enter upper division and graduate literature courses at UCLA.) The second foreign language requirement may be completed either by completion of two years of language classes, by one upper division literature class, or by passing with a score of 600 or higher, the Educational Testing Service foreign language examination administered by the Graduate Division. Translation examinations may be administered by departmental members in languages for which no ETS examination is available.

Course Requirements. Candidates for the M.A. degree specialize in two literatures in which they take a total of eight courses; five are taken in the major literature and three in the minor. Four additional courses are taken from those designated as Comparative Literature courses. The following 12 courses are the minimal course requirements. Some students will take extra courses to make up deficiencies.

1. Four courses in Comparative Literature

   a. Comparative Literature 200 — Methodology; theory of literature, bibliography, etc.

   b. One of the following courses: Comparative Literature 201, 202, or 204.

   c. The comparative study of one genre, e.g., the novel, the epic, the lyric, the drama.

   d. The comparative study of one period or movement, e.g., Baroque, Romanticism.

2. Five courses (a minimum of three must be graduate courses; the other two, upper division) in the student's major literature. The departmental course in the history of the language of that particular literature may be included.

3. Three courses, either graduate or upper division, in the student's minor literature. The student should be directed to study periods, genres, or problems in the minor literature which lend themselves to comparison with similar elements in his/her major literature.

Of the above required courses, 12 units at most may be 500 series courses. The M.A. degree normally takes seven quarters to complete.

Examination Plan. The examination for the M.A. is both written and oral, testing both historical knowledge and comprehension of methodology. The results of this examination determine the student's ability to continue toward the Ph.D. degree in Comparative Literature. There are three possible results of the examination: a student may receive a M.A. degree and be allowed to progress toward the Ph.D., may be granted a terminal M.A., or may fail the examination altogether. The Program allows a maximum of two attempts to pass the M.A. examinations.

The written examinations test the student's skill in literary analysis and his/her detailed knowledge of specified works in the major and minor literatures. The examinations are based on reading lists from the works of at least 10 to 15 authors in the major literature and the works of at least five authors in the minor literature. Normally, the student's reading list consists of approximately 24 to 30 works in the major literature and 12 to 15 works in the minor literature.

The reading list for the major literature should contain both prose and poetry, although one of these may be emphasized. In addition, the list must include representative texts outside the period of specialization. For example, students specializing in the 19th and 20th century novel should have novels from the 17th and 18th centuries on their reading lists.

The reading list for the minor literature is focused almost entirely on the student's period of specialization.

All reading lists must be approved by the Chair of the student's M.A. committee as well as by the Program Chair or Graduate Adviser approximately one quarter before the student intends to be examined. Copies of the final reading lists must be submitted to the administrative assistant in the Comparative Literature office. Sample reading lists are available in the Comparative Literature office.

The examination committee for the M.A. is composed of three or four faculty members from the departments of the major and minor literature and the Comparative Literature Program. Students may suggest to the Chair or Graduate Adviser, faculty members whom they wish to be on the M.A. committee, although selection cannot be guaranteed on this basis alone. It is strongly recommended that students take at least one course from each member of their committee.

Time to Degree. It is recommended that the candidate complete the M.A. in seven quarters.

500 Series Course Limitations. 12 units at most may be 500 series courses. 596 and 597 courses given with S/U grades may be offered. Only one of these courses may be counted toward the 5-graduate-course requirement.

Disqualification. Students may be disqualified on the basis of falling below a 3.4 grade point average two quarters in a row. Failure to progress toward the degree at a rate of five courses per year or failure to pass either the written or the oral examinations may lead to disqualification.

Appeals. Students may appeal disqualification by filing a written appeal with the Program Chair. The Chair will appoint a committee which may include the Chair, to review the student's disqualification and, if necessary, meet with the student. On the basis of that committee's report, the Chair will make a final decision and report it to the Graduate Division.

The Ph.D. Degree

Admission Requirements. 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. degree. This examination establishes that the applicant is at the same level of graduate work in the major and minor literatures as a holder of the Program's M.A. degree. The examination is conducted along lines similar to the M.A. examination described above. It should be taken within the first year of residence.

Advising. Graduate advisers are: Professor Arnold J. Band, Professor Katherine C. King, Professor Kathleen L. Komar, Professor Lucia Re, and Professor Ross P. Shideler. They can be contacted at the Comparative Literature Program office, 334 Royce Hall, UCLA.

Students are assigned advisers for their first year; thereafter, changes may be made to suit the student's program of study. Students' records are reviewed on a regular basis by the core committee of the Comparative Literature Program. Any student falling below a 3.4 grade point average is sent a warning by the Chair and may be placed on probation.

Students should meet at least quarterly with their advisers.

Major Fields or Subdisciplines. The student's study plan for the Ph.D. should combine the work in the major and minor literatures by focusing on a limited area in which these literatures may be fruitfully explored. This area may be a literary period (e.g., the late Middle Ages, the 16th century, or the Romantic Age) or a particular aspect common to all three 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 Requirements. The candidate 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, i.e. Romance and Germanic, English and Slavic, etc. If the student intends to offer three literatures written in foreign languages for his/her Ph.D. degree, he/she is 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. degree are to be fulfilled in the same way as those for the M.A. degree.

Course Requirements. Students entering with an M.A. will be required to pass the Permission to Proceed examination and to take *a minimum* of six graduate courses. However, they may be required to take up to 12 courses. Of the required six, three must be in Comparative Literature and one must be from each of the student's major and minor literatures. Other relevant or necessary courses will be 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, students are strongly advised to take *at least* two and usually three courses in each of their literatures.

Students who have taken their M.A. in the Comparative Literature Program at UCLA will be required to complete a minimum of six graduate courses. Two of these should be Comparative Literature courses and one of the two should have a theoretical orientation (such as CL 202, 203, 204...) Additional courses may be required up to a maximum of 12. Usually included in these courses will be additional courses in the major and first minor literature. Three courses in the second minor are normally recommended.

Teaching Experience. Teaching experience is not required but is highly recommended for the Ph.D.

Written and Oral 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. The reading list for the major should include texts from the earliest works in the literature through the 20th century. As long as historical depth is demonstrated, the list may emphasize a genre and specific periods. The period of specialization may account for up to half the items on the list. A normal reading list consists of approximately 50 to 60 primary works or items (an item is equivalent to a novel or long play). The reading list for each minor literature focuses on the period of specialization and consists of approximately 25 to 30 primary works. (Works from the M.A. lists may be included but it is assumed that relevant critical texts will be part of the student's knowledge pertaining to those texts). Examples of reading lists are on file in the Program office.

The written examination for the major is divided into two parts, one designed to demonstrate broad historical knowledge, the other to demonstrate a more specific knowledge of the student's special period or problem. Usually two examinations of three to four hours each are taken in the major literature; a three to four hour written examination is taken in each of the minor literatures. The oral examination must be taken within 60 days of the passage of the last written examination.

The oral examination covers three areas:

1. Competence as determined by the reading lists and the written examinations in the major and minor literatures.

2. Both a familiarity with major critical texts pertaining to the reading lists and competence in general literary theory.

3. The proposed dissertation topic based on the prospectus. (A 10 to 12 page prospectus must be submitted to members of the committee in preparation for the oral examination.)

The Program allows a maximum of two attempts to pass the Ph.D. examinations.

Doctoral Committee. The examination committee for the Ph.D. is usually composed of five faculty members from the departments of the major and minor literatures and the Comparative Literature Program (three of the five members are normally associated with the Program). Students are strongly advised to begin choosing possible members of their committee and working with these faculty members from their entrance into the Program.

The Dissertation. The doctoral dissertation must demonstrate original critical work in the field. Although a topic comparing literatures is commonly undertaken, Comparative Literature students may write a dissertation on a single subject in a single field provided that their wide range of knowledge is demonstrated by the quality of the work. The dissertation usually runs between 180 to 250 pages. Precise details concerning preparation and filing of the dissertation should be obtained from the Graduate Division, Student and Academic Affairs Section.

Candidates should regularly submit sections of their dissertation to the three reading members of the doctoral committee. All three members must certify approval of the dissertation.

Final Oral Examination Following Completion of the Dissertation. No final oral examination is required after the filing of the dissertation.

Time to Degree. Ph.D. candidates usually take their qualifying examinations six to nine quarters after the M.A., although it is possible to take the examinations as soon as the candidate's doctoral committee feels that he/she is adequately prepared. The doctoral dissertation usually requires an additional three quarters. Normative time-to-degree from admission to graduate status to award of the degree is 18 quarters (six years).

Candidate in Philosophy Degree. Students are eligible to receive the C. Phil degree on advancement to candidacy for the Ph.D.

Disqualification. Students may be disqualified on the basis of falling below a 3.4 grade point average two quarters in a row. Failure to progress toward the degree at a rate of five courses per year or failure to pass either the written or the oral examinations may lead to disqualification.

Appeals. Students may appeal disqualification by filing a written appeal with the Program Chair. The Chair will appoint a committee, which may include the Chair as a member of the committee, to review the student's disqualification and, if necessary, meet with the student. On the basis of that committee's report, the Chair will make a final decision and report it to the Graduate Division.

*Graduate Courses

200. The Methodology of Comparative Literature. Prerequisite: consent of instructor. A study of both the methodology of comparative literature and the theory of literature.

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

201. Contemporary Theories of Criticism. Prerequisite: course 200 or its equivalent. An advanced course in the theory of literature focusing upon structuralist, psychoanalytic, and Marxist approaches.

202. Problems in the Theory of Literature. Prerequisite: a reading knowledge of French or German; Comparative Literature 201 or its 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 will 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. (May be concurrently scheduled with Humanities C105.) Literary masterpieces, both dramatic and nondramatic, selected to demonstrate the varieties of comic expression. Graduate students will be required to prepare papers based on texts read in the original language. These students will meet as a group an additional hour each week. Mr. Band

C207. The Classical Tradition: Epic. Seminar, three hours. Prerequisite: reading knowledge of Greek, Latin or Italian. (May be concurrently scheduled with Humanities C107.) The *Iliad*, the *Odyssey*, the *Aeneid*, the *Gerusalemme Liberata*, and *Paradise Lost* will be analyzed both in relation to their contemporary societies and to the literary tradition. Emphasis will be on how poets build upon the work of their predecessors. Graduate students will be required to prepare papers based on texts read in the original language. These students may meet as a group an additional hour each week. Ms. King

C209. The Crisis of Consciousness in Modern Literature. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C109.) Study of modern European and American works which are concerned both in subject matter and artistic methods with the growing self-consciousness of the artist and his society, focusing on the works of Kafka, Rilke, Woolf, Sartre, and Stevens. Graduate students will be required to prepare papers based on texts read in the original language. These students will meet as a group an additional hour each week. Ms. Komar

C211. The Classical Tradition: Tragedy. Prerequisite: knowledge of one appropriate foreign language, usually Greek or French. (May be concurrently scheduled with Humanities C111.) Analysis of selected Greek dramas and their recreations in Rome, in the Renaissance, and in the modern period. Graduate students will be required to prepare papers based on texts read in the original language. These students may meet as a group an additional hour each week.
Ms. King

221. The Lyric: Classical to Modern. Prerequisite: some knowledge of either Latin or Greek. An examination of the genres and conventions of Greek and Roman lyric poetry and their influence on subsequent European poetry.

C229. Archetypal Heroes in Literature. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C129.) Survey and analysis of the function and appearance of such archetypal heroes as Osiris, Ulysses, Prometheus and Oedipus in literature from antiquity to the modern period. Graduate students will be required to prepare papers based on texts read in the original language and will meet as a group an additional hour per week.

230. Translation Workshop. Prerequisite: a solid reading knowledge of at least one foreign language and consent of instructor. 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. Open to qualified undergraduates with proper language preparation.
Mr. Heim

C239. Early Medieval Literature. Four lectures; discussion, one hour. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C139.) The course will consist of a survey of the Latin and Germanic literatures from the fall of Rome to the beginning of the Twelfth Century. Graduate students will be required to write papers based on texts read in the original languages, and may meet as a group an additional hour each week. Mr. Calder

C240. Medieval Epics. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C140.) The seminar will consider five medieval epics: *Beowulf, El Cid, Chanson de Roland, Niebelungenlied,* and *Njalssaga*. There will be two objectives: first, a critical understanding of each work, and second, an understanding of the nature of epic literature. Assignments will consist of an extended seminar paper and short oral reports. Graduate students will be required to prepare papers based on texts read in the original languages. Mr. Condren

C245. Renaissance Drama. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C145.) The course offers a broad introduction to the subject matter and types of plays in the Renaissance. Historical and literary influences on the plays will be considered. Readings will include works of such dramatists as: Tasso, Machiavelli, Lope de Vega, Racine, Jonson, Shakespeare. Graduate students will be required to prepare papers based on texts read in the original language and will meet as a group one additional hour per week. Mr. Braunmuller

C270. The Dream in English and German Romantic Literature. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C170). A study of the use of the dream as a standard narrative technique in English and German Romantic Literature.
Mr. Burwick

271. Dramatic Theory and Criticism in German and English Romanticism. Prerequisite: a reading knowledge of German. This seminar examines the generic conception of drama in the critical essays of the Schlegels, Tieck, Jean Paul, Coleridge, De Quincey, and Hazlitt. It gives particular attention to the role of the actor and the idea of dramatic action as discussed by the critics. Mr. Burwick

C272. The Grotesque in Romantic Literature and Art. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C172.) A study of the grotesque in the visual and verbal arts of the Romantic period: interpretation will address the aesthetics of tragic-comic interaction, the demonic vision, and the satirical sketches of man's abnormality and perversity. Graduate students will be required to prepare papers based on texts read in the original languages and will meet as a group an additional hour each week.
Mr. Burwick

274. The Search for Organic Forms. Prerequisite: reading knowledge of French or German. A seminar devoted to theories of the "organic" in the eighteenth and nineteenth centuries, with special emphasis on Rousseau and Goethe. A large part of the course will be given to studies of the transition made between theories of nature and theories of state.
Mr. Maniquis

C275. The Nineteenth Century Novel. Prerequisite: reading knowledge of French or German. (May be concurrently scheduled with Humanities C175.) A comparative study of the 19th century novel in England and on the continent. Novels will be selected so as to allow the seminar to concentrate on a particular tradition or critical problem. Mr. Lehan

C276. Fiction and History. Prerequisite: reading knowledge of one appropriate foreign language. (May be concurrently scheduled with Humanities C176.) The course analyzes the use of historical events, situations, and characters in works of fiction that are not necessarily "historical novels." Texts and individual assignments range from nineteenth century authors such as Stendhal, Tolstoy, Verga, to Proust and contempories like Vidal, Grass, Garcia Marques. Use of fictional methods by historians may also be analyzed.
Ms. Re, Mr. Pasinetti

C280. The Symbolist Tradition in Poetry. Prerequisite: reading knowledge of either French or German. (May be concurrently scheduled with Humanities C180.) A study of the symbolist tradition in English, French and German poetry. Graduate students will be required to prepare papers based on texts read in the original languages and may be required to meet as a group an additional hour each week. Mr. Shideler

C281. Poetry and Poetics of the Post-Symbolist Period. Prerequisite: reading knowledge of either French or German. (May be concurrently scheduled with Humanities C181.) 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 G. Appollinaire and A. Breton, Imagists, and major individual poets such as E. Pound, T.S. Eliot, Paul Valery, R.M. Rilke, Stefan George, and Wallace Stevens. Graduate students will be required to prepare papers based on texts read in the original languages and may be required to meet as a group one additional hour per week.
Mr. Shideler, Ms. Komar

292. The Psychological Novel. Prerequisites: major in literature and 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 will be assigned in addition to the required fiction. Mr. Hutter

C297. The Mystery Novel. Prerequisite: reading knowledge of French. (May be concurrently scheduled with Humanities C117.) A study of mystery and detective fiction in England, France, and the United States. The origin, form and historical significance of mystery fiction will be developed through close readings of selected works. Graduate students will be required to participate in a special discussion section and to prepare papers based on texts read in the original languages. Mr. Hutter

495. Preparation for the Teaching of Literature and Composition. (½ course) Lecture, three hours. Seminar on problems and methods of presenting literary texts as exemplary materials in the teaching of composition. The course will deal with theory and classroom practice and involve individual counseling and faculty evaluation of TAs' performance. May not be used to fulfill any of the course requirements of the M.A. Degree. S/U grading.

596. Directed Individual Study. (½ to 2 courses) Graded S/U only.

596X. Directed Individual Study. (½ to 1 course) Preparation for Foreign Language Examination. Graded S/U only.

597. Preparation for the Doctoral Qualifying Examination. (½ to 2 courses) Graded S/U only.

599. Research on Dissertation. (½ to 2 courses) Restricted to those who have passed the qualifying examination for the doctor's degree. Graded S/U only.

Computer Science

At UCLA, the Department of Computer Science is a unit of the School of Engineering and Applied Science. The Department offers graduate programs leading to the M.S. and Ph.D. in Computer Science. For further information, please refer to the section on Engineering and Applied Science.

Dance

(Office, 205 Women's Gym)

Elsie Dunin, M.A., *Professor of Dance.*
Pia Gilbert, *Professor of Dance.*
Alma M. Hawkins, Ed.D., *Professor of Dance (Emeritus).*
Carol Scothorn, M.A., *Professor of Dance (Chair of the Department).*
Marion Scott, *Professor of Dance.*
Allegra Fuller Snyder, M.A., *Professor of Dance.*
Emma Lewis Thomas, Ph.D., *Professor of Dance.*
Erma Alperson, Ph.D., *Associate Professor of Dance.*
Doris Siegel, *Associate Professor of Dance.*
Ilene Serlin, Ph.D., *Acting Assistant Professor of Dance.*
Judy Susilo, *Assistant Professor of Dance.*

•

Charles Berliner, M.F.A., *Lecturer in Dance.*
Gloria Bowen, *Lecturer in Dance.*
Bill De Young, M.A., *Lecturer in Dance.*
Gary Faltico, Ph.D., *Lecturer in Dance.*
Angelia Fisher, M.A., *Lecturer in Dance.*
Katherine Howard, M.A., *Lecturer in Dance.*
Martha Kalman, M.A., *Lecturer in Dance.*
Margalit Oved Marshall, *Lecturer in Dance.*
Barbara Mattingly, *Lecturer in Dance.*
Emilo Pulido-Huizar, B.A.C., *Lecturer in Dance.*
Mia Slavenska, *Lecturer in Dance.*
Suenobu Togi, *Lecturer in Dance.*
Martin Tracy, M.A., *Lecturer in Dance.*
Melinda Williams, M.A., *Lecturer in Dance.*
Medha Yodh, M.A., *Lecturer in Dance.*

The Master of Arts Degree

Admission Requirements. A baccalaureate degree with an undergraduate major in dance or equivalent experience. Some of this experience may have been gained outside the academic setting through such avenues as studio work.

Prospective students may write to the Department of Dance, WG 205, University of California, Los Angeles, California 90024, for departmental brochures which give additional information on the graduate program. The Department has one additional application form in addition to those used by Graduate Admissions. (see below).

Three letters of recommendation are required.

The audition will look at the technical proficiency and creative potential of each applicant, 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, the sense of form and forming. Because the Department recognizes the importance of diversity and specialization at the graduate level, each applicant will be evaluated according to his/her primary focus, i.e., performance-choreography, education, therapy or ethnology.

The audition is in several parts: Part One will be a practical session in which the applicant will participate in a technique class.

Part Two will give the candidate the opportunity to show a work of his/her own choreography of not more than four minutes with accompaniment. For the ethnology candidate, the composition may be in a movement style of his/her choice and is not limited to modern.

Part Three is an interview with faculty. The purpose of the interview is threefold: To give the interviewee detailed information about the program, to let the faculty know the candidate as a person, and discuss his/her aims and interests, so as to help determine whether this program will fulfill the prospective student's expectations and needs.

For therapy students there will be an additional movement session.

In order to establish the equivalency, the applicant is asked to fill out the "M.A. Candidate Graduate Evaluation Form" which describes in detail the requirements of our undergraduate program. This form may be obtained by writing to the Department directly.

Although not all graduates who enter the program have filled all deficiencies, the greater the approximation, the more likely a candidate is for consideration for the program.

These requirements apply to all applicants even though their focus at the graduate level may be a specialization in therapy, ethnology, education, or performance and choreography. There is a variation in requirements noted in the "M.A. Candidate Graduate Evaluation Form" for the therapy and ethnology specializations.

Advising. At the time of admission, students are assigned an academic adviser within their selected specialization. Professor Marion Scott now serves as adviser in Performance/Choreography, Professor Emma Lewis Thomas in Education, Professor Erma Alperson in Dance Therapy, and Professor Allegra Fuller Snyder in Dance Ethnology.

These advisers may be changed if the student's focus of interest alters while within the first year of the program. Either faculty, student or adviser may recommend this change. Continuing students should meet with their academic adviser each quarter to plan their program of study for the subsequent quarter. Records of these meetings are kept in the students' folders. A general orientation meeting is held during the first part of the Fall Quarter for all advanced degree students. The progress of all students is assessed periodically in special faculty meetings. Any problems are reported to the student preferably orally, but sometimes in written form through the Chair of the Department.

Major Fields or Subdisciplines. There are four major areas of specialization recognized by the Department: Choreography/Performance; Dance Therapy; Dance Education, and Dance Ethnology. There is also the possibility of doing thesis work in such areas as Dance History, Philosophy and Criticism, Dance Kinesiology, Dance Production, Dance and Media, Music for Dance, and Dance Notation. Programs in these special areas may be set up on the advice of the Chair or an adviser after the student has been in the graduate program for several quarters and has identified a unique interest and competence in one of these areas.

Foreign Language Requirement. There is no foreign language requirement. It is, however, recommended for students specializing in Dance Ethnology who will be engaged in field work that during the course of their graduate study or in preparation for it, they gain a working knowledge of the language of the area where they will do their research.

Course Requirements. Requirements for graduation: nine courses, 36 units.

a. All students are required to take Dance 202.

b. Four courses, or 16 units, in the Department at the graduate level. These courses will bear a 200 number.

c. Four courses, or 16 units, in or outside the Department at upper division or graduate level. *These may not be classes that are being taken to fulfil deficiencies.* Technique and ethnic performance classes may also not be used in this category.

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 or Comprehensive Examination Plan. Under the Thesis Plan the student will prepare a thesis which is a report of the results of his or her original research or creative work. Before beginning work on the thesis, the student must obtain approval of the subject and general plan from the Graduate Faculty Committee consisting of all tenured faculty in the Department. This presentation is usually made four or five quarters after the commencement of graduate work. If the Thesis Plan is accepted, a thesis committee will be formed. The thesis committee consists of three faculty members, two from the Department of Dance and one from an outside department. If a student fails in his/her first presentation, he or she may be reexamined. Conditions for reexamination are based on the support of several faculty members who indicate to the Chair that a reexamination seems warranted.

Under the Comprehensive Examination Plan the course requirements are the same as those for the thesis with the addition of one course. This plan would include an independent study project and a final examination. Because of the nature of the discipline, the Comprehensive Examination Plan is rarely followed.

Time to Degree. Six quarters for a student with no deficiencies.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	No. of Times may Be Repeated
596A	2-8	Letter	No limit
596R	2-8	S/U	No limit
598	2-8	S/U	No limit

Eight units of 500 series may apply toward total requirement.

Four units of 500 series may apply toward minimum graduate course requirement.

Disqualification and Appeal of Disqualification. Reasons for disqualification in the past have been failure to maintain a grade point average of 3.0. Because of the audition for entrance and the close advising process, students and administration have either worked out ways to make student achievement suitable, or they have mutually agreed on separation.

Other Relevant Information. While field work is not a requirement for those specializing in the area of Dance Ethnology, it is strongly suggested as a part of the student's program. The specialization in Dance Therapy requires field experience or internship to provide an orientation to the hospital setting and experience as a movement therapist. This requires one-half day of internship each week throughout the first year. 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.

The graduate dance-movement therapy program received approval from the American Dance Therapy Association in 1978. An M.A. in this field is a prerequisite for registry from A.D.T.A.

Upper Division Courses Which May Be Used As Credit Toward the M.A. Degree:

111C. Analysis of Human Movement.

116. Improvisation in Dance.

127. Foundation of Dance Education.

128. Dance as Culture in Education.

140A, 140B, 140C. Dance Cultures of the World.

142-146. Dance in the Balkans, India, Indonesia, Japan, Latin American.

152C. Advanced Studies in Dance Theater Lighting.

155. Form and Structure in Choreography.

159. Advanced Dance Notation.

160. Creative Dance for Children.

165A, B, C. Movement Dynamics and Personality Growth.

190A, 190B, 190C. Advanced Dance Performance.

191. Repertory Dance Tour.

*Graduate Courses

200. Dance Notation. (½ course) Prerequisite: course 159. Advanced study of dance notation. Mrs. Scothorn

202. Research Methods and Bibliography in Dance. Mr. Faltico, Mrs. Thomas.

204A-204B-204C. Advanced Choreography. (½ course, 1 course, ½ course) Prerequisite: course 153C or the equivalent. Theoretical and creative aspects of advanced choreography. Mrs. Scothorn, Ms. Scott

204D-204E-204F. Advanced Choreography. Prerequisites: courses 204A-204B-204C and consent of instructor. Theoretical aspects of advanced choreography for the student who has reached the level of self-initiation of substantial creative works. The course will focus on refinement, realistic self-evaluation as well as critical counsel by acknowledged choreographers. Mrs. Scothorn, Ms. Scott

206. Music for Dance. Prerequisite: course 154. Theory of the aesthetic and functional relationship of music to dance. Mrs. Gilbert

208. Principles of Dance Theater. Prerequisite: course 152A-152B. Principles which serve the presentation of dance. Mrs. Scothorn

210. Aesthetics of Dance. Prerequisite: course 158B. A critical analysis of aesthetic concepts related to dance. Mrs. Thomas

211A. Kinesiology for Dance. Lecture, four hours. Prerequisite: consent of instructor. The scientific basis for movement for dance. A study of the anatomical, kinesiological and physical principles and demands of dance. Mr. Tracy

220. Dance in the 20th Century. Prerequisite: course 151A-151B. Concepts, styles and forms of dance in the 20th century. Mrs. Thomas

221. The History of Ballet. Prequisite: courses 151A-151B. The development of ballet in its various stages: Renaissance, Baroque, Romantic Period; stylistic differences in Italy, France, Spain, and England; influence of the other arts and problems of ballet as an art form. Mrs. Thomas

223. Renaissance Dance. Prerequisite: course 151A-151B or consent of instructor. The evolution of the dance suite traced from its earliest records (Domenico da Placenza, 1430) to codification in words of Arbeau, Carose, Negri (1580-1610). Style will be studied through reconstruction of steps, costumes, music and presentational form. Mrs. Thomas

226A-226B-226C-226D-226E. Dance Expression in Selected Cultures. Prerequisites: course 140 or consent of instructor. Dance is viewed as an aspect of culture and human behavior. 226A - survey of literature: 226B - concepts of field work; 226C - objectives and goals of the discipline in relation to anthroplogy and behavioral sciences; 226D - methodologies and training in techniques for field work; 226E - ethics and problems; field projects. Ms. Dunin, Ms. Snyder

227A-227B. Advanced Studies in Dance Education. Prerequisite: consent of instructor. Course 227A must be completed before enrollment in 227B. A) Theory in the areas of movement, creativity and learning applied to the development of a framework for teaching dance as an art form. B) Establishment of dance in higher education with consideration for the body of knowledge, curriculum development and administration. Ms. Fisher

251A-251B-251C. Dance Movement Therapy: Theory and Practice. Lecture, two hours; laboratory, two hours. Prerequisite: consent of instructor. A one year sequential course which encompasses the interdisciplinary theoretical foundations and methodology of dance-movement therapy; special emphasis given to adult clinical populations. Ms. Alperson

252A-252B-252C. Seminar in Movement Therapy. Prerequisites: courses 251A-251B-251C and course 596R. Lecture, two hours; laboratory, two hours. A one-year sequential course which extends the conceptual and methodological foundations of dance-movement therapy to special clinical populations (children, adolescents and families). Ms. Alperson

*For concurrently scheduled courses ("C" prefix) suitable separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

C254. Music as Dance Accompaniment. Lecture, four hours. Prerequisite: course 35, or consent of instructor. Piano and percussion improvisation for dance. Choreographer-composer relationships. History of music for the dance with emphasis on contemporary trends. Music for the dance performance. Graduate students must complete two additional assignments. May be concurrently scheduled with course C154. Dance C254 is not to be counted toward the M.A. degree. Ms. Gilbert

258. Philosophical Bases and Trends in Dance. Prerequisite: course 150C. 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 will be based on extended reading list and term papers. This course counts toward the Master's degree. Ms. Gilbert

Professional Courses

495. Preparation for the Teaching of Dance in Higher Education. (½ course) Prerequisites: Graduate Standing and consent of instructor. Study of problems and methodologies in teaching Dance which includes seminars, workshops and apprentice teaching. May be repeated once for credit. Graded S/U. Ms. Williams

496. Directed Field Study in Dance Education. (½ to 2 courses) Prerequisites: Graduate Standing and consent of instructor. Group Seminar, 1 hour and Field Study (min. 2 hours). Directed field study to provide teaching experience in a community school or other approved site. Includes weekly group seminar. Graded S/U. No more than 4 units may be applied to elective requirements for M.A. degree. Ms. Williams

497A-497F. Clinical Practicum Supervision. (½ course) Lecture, one hour; discussion, two hours. This practicum in group supervision focuses on clinical concerns directly related to the graduate student's clinical internship. Issues relevant to therapeutic goals, the psychotherapeutic process and the clinical environment are discussed, particularly as they relate to supervision of group and individual patients. Must be taken concurrently with 251A or 252 and 596R. Graded S/U. Ms. Serlin

Individual Study and Research

596A. Directed Individual Study or Research. (½ to 2 courses)

596R. Directed Study or Research in a Hospital or Clinic. (½ to 2 courses)

597. Preparation for the Comprehensive Examination for the Master's Degree. (No Credit)

598. Research for and Preparation of the Master's Thesis. (½ to 2 courses)

Dentistry

The School of Dentistry

The UCLA School of Dentistry, which occupies facilities in the Center for the Health Sciences, offers a D.D.S. degree program (Doctor of Dental Surgery), a number of postdoctoral programs, and an Oral Biology M.S. degree program. **(See Oral Biology)**

D.D.S. Degree Program*

If you are interested in further details about the academic program leading to the D.D.S. degree or if you wish to make application to the

*The requirements for the D.D.S. degree are not stated in this catalog.

program, you are urged to get a copy of the Announcement of the School by writing to: Office of Student Affairs and Admissions, UCLA School of Dentistry, Los Angeles, CA 90024.

The D.D.S. program is a 4-year program where students undertake a comprehensive course of study in the biological and technological sciences to foster the highest standards of clinical competence in the practice of dentistry. The School is on the quarter system and admits 96 students each fall.

Admission Guidelines. The School of Dentistry encourages applications from students who demonstrate academic capability in undergraduate studies at an accredited 4-year university or college. Potential for study in dental science is judged on the basis of:

1. Scholastic record.

2. Aptitude for science demonstrated by academic record and by performance on the American Dental Association Aptitude Test (DAT). Information on and application for the DAT can be obtained by writing to: Division of Educational Measurements, Council on Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

3. Academic and manual aptitude indicated by performance on the DAT, which must be taken the year *prior* to the year for which application is made. In order to avoid delay of application processing, it is advisable that the student take this examination during the April testing period.

4. Manner in which scholastic record was achieved; i.e., course load, standing of school attended, breadth of the course of study, extracurricular activities and work experience.

The applicant must satisfactorily complete a minimum of 135 quarter units (90 semester units) of instruction, including all predental requirements. A maximum of 70 semester or 105 quarter units of junior college work is applied in calculating the total. It is significant to note that the majority of applicants admitted to the School of Dentistry have had more than three years of college experience and most possess a bachelor's degree. Since UCLA is a state-supported institution, California and WICHE certified applicants are given considerable preference.

	Semester Units	Quarter Units
1. English	6	8
2. Inorganic chemistry with lab	8	12
3. Organic chemistry with lab	6	8
4. Physics with lab	8	12
5. Biology with lab	8	12
6. Introductory psychology	1 course	1 course

These are minimal requirements; students are encouraged to gain facility with these and related courses. All of the above requirements must be completed prior to matriculation into the School of Dentistry; however, application for admission may be submitted prior to their completion. The Committee on Admissions, in exceptional circumstances, may consider students who only partially fulfill these prerequisites.

Interviews are not generally used in assessing the suitability of an applicant to the UCLA School of Dentistry; however, the Committee on Admissions, in certain circumstances, may request interviews with individual applicants and additional tests, such as a manual dexterity examination, may be required of applicants as a criteria for admissions. Letters of recommendation are not required by this school, but will be considered if submitted. Applicants wishing to submit additional information not covered in the application form, which may be helpful, may do so in a letter to the Committee on Admissions in no more than two typewritten (double spaced) pages.

Application Procedure. UCLA participates in the American Association of Dental Schools Application Service (AADSAS). Application materials are available April 15-October 15 and may be obtained from: AADSAS, P.O. Box 1003, Iowa City, Iowa 52240. Completed applications for UCLA are accepted by AADSAS no later than October 15 of the year prior to that in which the student wishes to enroll. At the time of application, a check for $20.00 payable to The Regents of the University of California should be forwarded to: Office of Student Affairs and Admissions, UCLA School of Dentistry, Los Angeles, California 90024. Notice of acceptance, rejection or alternate status will be sent to the applicant following completion of the formal evaluation by the Admissions Committee, beginning December 1 of any given year. Notification of rejection does not necessarily imply similar Committee action on subsequent applications.

An applicant receiving a letter of acceptance to the School of Dentistry must submit a deposit of $50.00 (applicable to registration fees) within 30 days, unless otherwise indicated, in order to reserve a place in the class. This deposit is refundable for a period of six weeks following acceptance upon written notice to the Admissions Committee that the student wishes to withdraw his or her application. After this time period, the deposit is refundable only if the candidate's acceptance is rescinded by the School of Dentistry.

Postdoctoral Programs

Specialty Education. The School of Dentistry offers the following opportunities for postdoctoral study: a 1-year General Practice Residency Program; a 1-year Residency in Maxillofacial Prosthodontics; a 3-year Oral & Maxillofacial Surgery Residency Training Program; a 3-year combined Orthodontic-Pediatric Dentistry Program; and 2-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, California 90024.

Earth and Space Sciences

(Office: 3806 Geology)

[17]Orson L. Anderson, Ph.D., *Professor of Geophysics.*
[17]Arthur L. Boettcher, Ph.D., *Professor of Geochemistry and Geophysics.*
[17]Friedrich H. Busse, Ph.D., *Professor of Geophysical Fluid Dynamics.*
Donald Carlisle, Ph.D., *Professor of Geology and Mineral Resources.*
John M. Christie, Ph.D., *Professor of Geology.*
[17]Paul J. Coleman, Jr., Ph.D., *Professor of Geophysics and Space Physics.*
Wayne A. Dollase, Ph.D., *Professor of Geology.*
[17]W. Gary Ernst, Ph.D., *Professor of Geology and Geophysics (Chair of the Department).*
Clarence A. Hall, Jr., Ph.D., *Professor of Geology.*
David D. Jackson, Ph.D., *Professor of Geophysics.*
[17]Isaac R. Kaplan, Ph.D., *Professor of Geology and Geochemistry.*
[17]William M. Kaula, D.Sc., *Professor of Geophysics.*
[17]Margaret G. Kivelson, Ph.D., *Professor of Space Physics (Vice-Chair of the Department).*
Helen Tappan Loeblich, Ph.D., *Professor of Paleontology and Geology.*
[17]Robert L. McPherron, Ph.D., *Professor of Space Physics and Geophysics.*
Clemens A. Nelson, Ph.D., *Professor of Geology.*
Gerhard Oertel, Dr.rer.nat., *Professor of Geology.*
John L. Rosenfeld, Ph.D., *Professor of Geology.*
[17]J. William Schopf, Ph.D., *Professor of Paleobiology.*
Gerald Schubert, Ph.D., *Professor of Geophysics and Planetary Physics.*
[17]Ronald L. Shreve, Ph.D., *Professor of Geology and Geophysics.*
[17]John T. Wasson, Ph.D., *Professor of Geochemistry and Chemistry.*
Kenneth D. Watson, Ph.D., *Professor of Geology.*
[17]Robert E. Holzer, Ph.D., *Emeritus Professor of Geophysics.*
George Peter Bird, Ph.D., *Associate Professor of Geophysics and Geology.*
Donald J. DePaolo, Ph.D., *Associate Professor of Geochemistry and Geology.*
Walter E. Reed, Ph.D., *Assistant Professor of Geology.*
Paul M. Davis, Ph.D., *Assistant Professor of Geophysics.*
Michael J. DeNiro, Ph.D., *Assistant Professor of Geochemistry.*
William I. Newman, Ph.D., *Assistant Professor of Planetary Physics.*
William M. Bruner, Ph.D., *Adjunct Professor of Geology.*

•

Mario E. Bauer, Ph.D., *Professor of Chemistry.*
Kyle D. Bayes, Ph.D., *Professor of Chemistry.*
Lawrence C. Bonham, Ph.D., *Lecturer of Petroleum Geology.*
Robert E. Jones, B.S., *Lecturer in Geology.*
[17]Leon Knopoff, Ph.D., *Professor of Geophysics and Physics.*
Alfred R. Loeblich, Ph.D., *Adjunct Professor of Paleontology and Geology.*
Ajit K. Mal, Ph.D., *Professor of Engineering and Applied Science.*
Paul M. Merifield, Ph.D., *Lecturer in Engineering and Environmental Geology.*
Malcolm F. Nicol, Ph.D., *Professor of Chemistry.*
Everett C. Olson, Ph.D., *Emeritus Professor of Geology.*
LouElla R. Saul, M.S., *Senior Museum Scientist.*
Floyd F. Sabins, Jr., Ph.D., *Lecturer in Geology.*
Gerhard Stummer, B.S. *Lecturer in Geology.*

Takeo Susuki, D.Sc., *Senior Museum Scientist and Lecturer.*
Peter P. Vaughn, Ph.D., *Professor of Zoology.*
Morton G. Wurtele, Ph.D., *Professor of Atmospheric Dynamics.*
Michio Yanai, D.Sc., *Professor of Atmospheric Dynamics.*

Programs and Major Fields. 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, non-renewable natural resources, organic geochemistry, paleobiology, petrology, sedimentology, stratigraphy, structural geology, tectonophysics, and other fields. The program in Geophysics and Space Physics offers study in 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.

Admission. Application may be made for admission to any Quarter. Students who wish to apply for fellowships or teaching assistantships should be aware that these are allocated in March for the following academic year; in order to allow sufficient time for processing, complete applications should therefore be received by February. Graduate Record Examination scores are required of all applicants; 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, UCLA, Los Angeles, California 90024. In addition to the University application form, a separate Departmental application form is required. This form, and a brochure giving information about the Department, may be obtained from the Graduate Adviser.

Admission is based on the likelihood of success in the program requested, as judged from the materials submitted with the applications. The more important criteria considered are: (a) the appropriateness of the program to the applicant's stated objectives and background; (b) the applicant's academic record, especially in the relevant basic sciences; (c) the applicant's Graduate Record Examination scores in verbal, mathematical and analytical ability, and in the relevant advanced test; (d) the applicant's statement of purpose, which should deal more with intellectual goals and motivations than with occupational ones; and (e) the three required letters of recommendation, which should be from people familiar with the applicant's intellectual and motivational qualifications for academic pursuits.

Advising. Entering students choose or are assigned a faculty adviser or advising committee just prior to the first quarter of enrollment. With the approval of the Graduate Adviser the advising committee may be reconstituted at any time to fit developing interests or other circumstances. At the beginning of every quarter each student's program must be reviewed and approved by his or her faculty adviser before submission for official approval by the Graduate Adviser.

The Graduate Student Affairs Committee, a faculty committee chaired by the Graduate Adviser, annually reviews the progress of each student (generally in late May or early June). These reviews become part of the student's departmental record and are transmitted in writing both to students and their faculty advisers. Students whose scholarship or progress are insufficient are subject to dismissal.

The normal minimum course load is 12 units per quarter.

Foreign Language Requirement. Advising committees may require one or more foreign languages in special individual cases. The Committee determines how the requirement is to be fulfilled.

Disqualification. Process of reaching termination decision: periodic, but at least annual review of the progress of all graduate students by the Graduate Affairs Committee. Specific conditions leading to the recommendation of termination:

(a) Failure to register or give adequate reasons for leave of absence as judged by the Graduate Affairs Committee.

(b) Failure of Written or Oral Qualifying Examinations or Final Oral Examination. Recommendation is at the option of the examining committee.

(c) Failure to meet requirements agreed upon between the student and the Graduate Affairs Committee or the student's advising committee regarding course scheduling and deadlines for examinations or completion of degree.

(d) Failure to maintain minimum progress toward degree goal as specified in "Time to Degree" under each separate program, given below.

Normally, a warning would precede a recommendation of dismissal.

Appeals. The student may appeal such a recommendation by means of a letter to either the Graduate Adviser or the Department Chair.

Program in Geochemistry

Admission. A bachelor's degree in chemistry, geology, physics, or related field is required. Applicants must have outstanding records in the basic sciences, physics, chemistry and mathematics. The Graduate Record Examination Advanced Test may be in any appropriate field of science.

General Graduate Course Requirement. Each course of study is worked out individually by the advising committee in consultation with the student. All students are expected to attain, either through their previous training or through prescribed coursework, a common mastery of the subject matter of courses 51A, B, and C, M130, M131, 234B and Chemistry 110A and B, as well as more advanced courses in particular fields, and some familiarity with the methods of field geology. All students are required to register in 235A, B, or C each quarter.

Master of Science (M.S.) in Geochemistry

Course Requirements. A minimum of nine courses is required for the degree, at least six of which must be graduate level courses. Apart from the general graduate course requirements stated above, there are no specific courses required for the M.S. degree.

Thesis Plan. The thesis must be approved by the student's research director (who usually will be the chair of his/her advising committee) as well as by the other members of his/her advising committee. No examination is required of students who write a thesis.

Comprehensive Examination Plan. The advising committee will prepare and administer the final examination (which will normally be oral). In the preparation for this examination the committee will take proper recognition of the fact that some students will be better qualified in chemistry and others in geology. However, it will be required that a distinct competence in one of these fields will be matched by at least an adequate performance in the other. In most cases, a failed final examination can be repeated one additional time.

Time to Degree. A student making normal progress and whose undergraduate training is not deficient should receive the M.S. degree after about four to seven quarters.

500 Series Course Limitations. These may be taken with the approval of the chairperson of the student's advising committee. The following courses are acceptable:

Course No.	Unit Value	Type of Grading	Number of Repeats
596	2-12	S/U or letter	No limit
597	2-8	S/U	Not more than one
598	2-12	S/U	No limit

Sixteen units of 500 series courses may be applied toward the total course requirement for the M.S. in Geochemistry. Twelve units may be applied toward the minimum graduate course requirement.

Doctor of Philosophy (Ph.D.) in Geochemistry

Course Requirements. There are no course requirements, apart from general graduate course requirements as stated above. Students are, however, expected to complete at least the minimum number of courses which are required for the M.S. degree.

Written and Oral Qualifying Examinations.

A. Written Qualifying Examination. This examination covers the field of geochemistry and related areas in geology and chemistry. It may include an oral part at the discretion of the advising committee. If failed, it can be repeated at the discretion of the advising committee.

B. Oral Qualifying Examination. After passing the Written Qualifying Examination the student must nominate his or her doctoral committee and arrange a time for the examination. At least a week before this examination, he or she must provide each member of the doctoral committee with a written prospectus of his or her proposed dissertation research. The subject matter covered in the examination includes, but is not limited to, the proposed research. Repetition of a failed examination is at the option of the doctoral committee.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is normally required.

Time to Degree.

A. The Written Qualifying Examination will normally be taken in the student's fifth or sixth quarter of residence.

B. The Oral Qualifying Examination should be taken as soon after the Written Qualifying Examination as practical. A nominal time would be the sixth or seventh quarter.

C. The dissertation and Final Oral Examination should be completed by the 12th to 15th quarter.

Candidate in Philosophy Degree. The Candidate in Philosophy (C.Phil.) degree is offered to students upon advancement to candidacy for the Ph.D.

Program 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.

General Graduate Course Requirements. Each course of study is worked out individually by the advising committee in consultation with the student. It may include appropriate courses offered by other departments. All students except those who have already passed course 111C are required to take either course 195G or the sequence 111A-111B-111C in their first year of residence. Depending upon their performance in 195G, students may subsequently be required to take all or part of the 111 sequence.

Master of Science (M.S.) in Geology

Master of Science (M.S.) in Geology with Specialization in Non-Renewable Natural Resources

Course Requirements. 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 4 units must be a geology seminar (courses 251 through 260, 283). Except for courses 597 and 598, courses graded on an S/U basis are not applicable toward the requirements. The advising committees may require additional courses in light of individual educational objectives and backgrounds.

Specialization in Non-Renewable Natural Resources: The objective of this program is to prepare students for professional careers in the geology of metallic, non-metallic, and fossil energy resources. Because of the diverse backgrounds of students entering the specialization, individual courses of study will be arranged in consultation with the Committee for Graduate Study in Non-Renewable Natural Resources. Particularly relevant courses include 128A, B, 129, M130, M131, 132, 135, 136A, 136C, 137, 138, 140, 144, 150, 227, 235A, B, C, 258, 268 and 283, 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 committee consists of the 3-member advising committee, whose chair is the supervisor of the thesis research. One member of the committee may be from another department. The thesis subject may be selected at once and the research undertaken concurrently with coursework; in any event, it should normally be selected within the first year of residence. The completed thesis must be approved by the thesis committee. If it is not, the committee may, on the basis of the student's academic performance, recommend either termination of graduate study or further coursework or research or both leading to submission of 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 is administered by the student's 3-member advising committee and one additional member who is appointed by the Graduate Adviser following consultation with the student. It consists of a 6-hour written part and a subsequent oral part. The written part covers the student's major field of study, whereas the oral part may be more general in scope. If the examination is failed, the committee may on the basis of the student's academic performance recommend either termination of graduate study or further coursework followed by another examination. Reexamination is not normally permitted more than once.

Time to Degree. From graduate admission to conferral of degree, normal progress is six quarters.

500 Series Course Limitations. These may be taken with the approval of the chairperson of the student's advising committee. The following courses are acceptable:

596	2-12	S/U or letter	No limit
597	2-8	S/U	Not more than one
598	2-12	S/U	No limit

Eight units of 500 series courses may be applied toward the total course requirement for the M.S. in Geology. Four units may be applied toward the minimum graduate course requirement.

Doctor of Philosophy (Ph.D.) in Geology

Course Requirements. There are no course requirements, apart from general graduate course requirements as stated above. Students are, however, expected to complete at least the minimum number of courses which are required for the M.S. degree and must take a geology seminar each year.

Written and Oral Qualifying Examinations.

A. Written Qualifying Examination. This examination must be taken before the end of the first year of the doctoral program if the student has a master's degree; otherwise, it must be taken before the end of the second year of enrollment. It is administered by the advising committee augmented by a fourth member who is appointed by the Graduate Adviser in consultation with the student and serves as chair of the examining committee. It is given in either a question-answer format or a proposal-proposition format, which the student may select.

The *question-answer format* consists of a 2-part examination. The first part is written, takes six hours, and can cover any aspect of geology in which the student has had training, including general background, current emphases, and in-depth focus on the student's special field. The second part is oral, is taken no later than a week after the first part, and can cover subjects from the written part, the field of the proposed dissertation, and specifics of the proposed research, although it is not limited to these topics.

The *proposal-proposition format* consists of an oral examination based on three written independent research proposals or scientific propositions in any combination, which must be submitted to the examining committee at least 10 days before the examination. One of the essays must specify the intended dissertation research. The examination is concerned with the originality and soundness of the proposals

and propositions, the depth and breadth of thinking they display, their scientific significance, and the quality of their elucidation and defense, although it is not limited to these topics.

B. Oral Qualifying Examination. After passing the Written Qualifying Examination, the student must nominate his or her doctoral committee and arrange a time for the examination. At least a week beforehand, he or she must provide each member of the doctoral committee with a written prospectus of his or her proposed dissertation research. The subject matter covered in the examination includes, but is not limited to, the proposed research. Repetition of a failed examination is at the option of the doctoral committee.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is normally required.

Time to Degree

A. The Written Qualifying Examination is normally taken during or prior to the sixth quarter of graduate work.

B. The Oral Qualifying Examination should be taken as soon as possible after successful completion of the Written Qualifying Examination and no later than the end of the 11th quarter.

C. The dissertation should be completed and the Final Oral Examination (defense of dissertation) taken by the 12th to 15th quarter.

Candidate in Philosophy Degree. The Candidate in Philosophy (C. Phil.) degree is available after successful completion of the Oral Qualifying Examination.

Program 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 Advanced Test scores are preferable in physics, although mathematics or geology are also acceptable.

Qualified students may proceed directly toward the Ph.D. degree, although most obtain the M.S. degree in the process.

Master of Science (M.S.) in Geophysics and Space Physics

Course Requirements. Courses applied toward the 36-unit minimum requirement must include courses 200A, B and C and at least 12 additional units of 200 series (graduate level) courses, of which at least half must fall within a single field of concentration (earth's interior, geophysical fluid dynamics, planetology, or space physics) selected by the student with approval of his or her faculty adviser and the remainder must contribute to his or her general competence in geophysics and space physics. Courses from the 500 series and courses graded on an S/U basis do not apply toward the minimum requirement.

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 not so rigorous. The examination is on the level of the introductory courses 200A, B, C. 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.

Time to Degree. From graduate admission to award of degree: five quarters.

500 Series Course Limitations. These courses do not apply toward the degree.

Doctor of Philosophy (Ph.D.) in Geophysics and Space Physics

Course Requirements. There are no specific requirements.

Written and Oral Qualifying Examinations

A. Written Qualifying Examination. In this program this 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.

(1) *Fundamental Physics Examinations.* Students must attain an average grade of 3.4 on a 4.0 scale in at least *three* fundamental physics examinations. These examinations may be the final examinations for any of the following courses: (a) ESS 201 (Classical Mechanics); (b) ESS 202 (Continuum Mechanics), (c) ESS 203 (Electrodynamics), (d) Physics 210A (Electromagnetic Theory I), (e) Physics 210B (Electromagnetic Theory II), (f) Physics 215A (Statistical Physics); (g) Physics 220 (Advanced Classical Mechanics); (h) Physics 231A (Methods of Mathematical Physics). Exceptions are that students may *not* get credit for both examinations in the following pairs, due to overlap of subject matter: ESS 201 and Phys. 220; ESS 203 and Phys. 210A; ESS 203 and Phys. 210B.

In addition to the above listed courses, a student may petition to count toward this requirement the final examinations in either or both of Phys. 221A (Quantum Mechanics I) and Phys. 221B (Quantum Mechanics II). Approval of a petition depends on relevance of quantum mechanics to more advanced study and research planned by the student.

A student may also petition to substitute the final examination of another graduate course of a physical science or engineering department for any of the above list. Approval of the petition depends on the substituted examination being of similar fundamental character and having greater relevance to the student's planned research and advanced study.

The fundamental physics examinations must all be passed prior to undertaking the field examination.

(2) *Comprehensive Examination.* This is a 6-hour written examination on the level of the introductory courses 200A, B and C 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. It must be passed before the Field Examination may be attempted.

(3) *Field Examination.* This examination must be first attempted within a year of passing the comprehensive examination. It consists of a 3-hour written part (which may be waived by mutual agreement of both student and examining committee) followed by an oral part. It tests the student's general knowledge of his or her field of concentration (earth's interior, geophysical fluid dynamics, planetology, or space physics) as defined by the student in a written statement to which he or she must obtain the examining committee's concurrence before arranging the examination. The examining committee consists of three or more faculty members, appointed by the Graduate Adviser in consultation with the student, of whom at least three must be from the Department and one must be from outside the student's field of concentration.

B. Oral Qualifying Examination. After passing the Field Examination, the student must nominate the doctoral committee and arrange a time for the examination as soon after the Field Examination as possible. The examination determines the suitability of the chosen problem for the Ph.D. dissertation and the capability of the student to pursue research on the problem, but it is not limited to these topics. Repetition of a failed examination is at the option of the doctoral committee. Students not passing this examination within five years after entering the program are subject to dismissal.

Final Oral Examination Following Completion of the Dissertation. This examination is required.

Time to Degree

From Admission to Completion of:

	Normal Time (Quarters)	Maximum Time (Quarters)
Comprehensive Examination	3	6
Fundamental Physics Examinations	4	9
Field Examination	6	12
Oral Qualifying Examination	9	15
Final Oral Examination (and Completion of Dissertation)	12	18

A student who has not passed an examination within the maximum time listed above is subject to dismissal, even though he/she may have a satisfactory grade point average.

Graduate Courses:

200A. Introduction to Geophysics and Space Physics 1: The Solid Earth and Planets. Prerequisite: Physics 105A, 110A, 112A, 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. Newman (F)

200B. Introduction to Geophysics and Space Physics 2: Oceans and Atmospheres. Prerequisite: Physics 105A, 110A, 112A, 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 3: Plasmas: Aeronomy and the Interplanetary Medium. Prerequisite: Physics 105A, 110B, 112A, 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. Mrs. Kivelson (Sp)

201. Classical Mechanics. Kinematics, variational principles and Lagrange's equations, rotational dynamics. Hamilton equations of motion, linear and non-linear perturbation theory, applications to the solar system. Mr. Newman (Sp)

202. Continuum Mechanics. 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. Kaula (F)

203. Electrodynamics. Prerequisite: upper division electromagnetic theory or consent of instructor. Maxwell's equations and boundary conditions; momentum, angular momentum and energy of electromagnetic fields; plane electromagentic and magnetohydrodynamic waves; wave guides, simple radiating systems and diffraction. Mr. Coleman (W)

***[1]205. Inverse Theory and Data Interpretation.** Prerequisites: Mathematics 115, 150. This course addresses the inverse modelling problem: to determine model parameters consistent with experimental data, considering the effects of random errors and nonuniqueness. Linear and quasi-linear problems will be emphasized, but nonlinear problems will be discussed. Tools to be used include matrix theory, quadratic forms, orthogonal rotations, statistics, the principal axis transformation for rectangular matrices, Backus-Gilbert resolving kernels, and Lagrange multipliers. Examples will be taken from a broad range of physical sciences.

***[1]208. Geothermics.** Lecture, two and one-half hours; discussion, one-half hour. Prerequisites: Mathematics 33A or consent of instructor. Basic concepts of heat transfer applied to the solutions of geological and geophysical problems. Problems discussed include: 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. G. Schubert

***[1]210. Advanced Paleontology.** Prerequisite: course 115 or advanced standing in biological science. Lectures will emphasize evolutionary, ecological, stratigraphic, and taxonomic aspects of fossil invertebrates. Field work and laboratory will be devoted to a research project and written report. Content will vary from year to year. May be repeated for credit.

***[1]M211. Hydrodynamic Instabilities and Turbulence.** (Same as Mathematics M263.) An introduction to the theories of hydrodynamic instability and the non-statistical 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. Mr. Busse

***[1]212. Paleoecology.** 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 will vary from year to year. May be repeated for credit.

***[1]214. Geophysical Fluid Dynamics.** 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. Mr. Busse (W)

***[1]215. Paleobiology of Plant Microorganisms.** 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.)

***[1]216. Micropaleontology.** 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.) Mrs. Loeblich (F)

217. Magnetohydrodynamics. The continuum theory of the interaction of conducting fluids and magnetic fields. Electrodynamics of moving media, boundary conditions, wave motion in bounded and unbounded media, energy flow, dynamo problem. Boundary layers and the effects of rotation. Geophysical and astrophysical applications. Mr. Busse (Sp)

***[1]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. Prerequisites: graduate standing in science; qualified undergraduates in biological and physical sciences admitted with consent of instructor. Current and classic problems in paleobiology, with emphasis on interdisciplinary problems involving aspects of biology, geology, organic geochemistry and cosmology. Course content to vary from year to year. May be repeated for credit. Mr. Schopf (W)

[1]222. Introduction to Seismology. 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 (W)

M224A. Elastic Wave Propagation I. (Same as Engineering M257A.) Prerequisite: Engineering 158A or 159A or consent of instructor. Elastic wave equation and elementary solutions; wave motions in elastic half-spaces; reflection and refraction of elastic waves; surfaces waves; vibrations of rods and plates. Mr. Knopoff, Mr. Mal (W)

M224B. Elastic Wave Propagation II. (Same as Engineering M257B.) Prerequisite: consent of instructor. Wave propagation in layered media; Green's function for various geometries; diffraction and scattering of elastic waves: attenuation; inversion problems. Mr. Knopoff, Mr. Mal (Sp)

[1]225A. Physics and Chemistry of Planetary Interiors 1. 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 (W)

225B. Physics and Chemistry of Planetary Interiors 2. Lateral inhomogeneities in the earth: seismic velocities, petrology, geothermal and gravitational variations; evidences of motion; remanent magnetism, seismic motions; post-glacial rebound; plate tectonics; rheology of mantle; thermal convection. Mr. Schubert (Sp)

226. Theoretical Geomorphology. Prerequisites: Mathematics 33A and one course in elementary probability theory, or consent of instructor; recommended, Geography M102. 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. (Offered approximately every third year.) Mr. Shreve (Sp)

227. Resource Evaluation Field Methods. Prerequisite: course 111B and 128A or 128B or 138 or consent of instructor. Techniques of mapping, sampling, appropriate laboratory studies, economic or socio-economic evaluation of a variety of non-renewable natural sources; preparation of reports. Mr. Carlisle (Sp)

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. Mr. Schubert (W)

***[1]229. Planetary Surfaces and Atmospheres.** Prerequisite: course 200A-200B. Study of planetary observations toward determining the evolutionary history and current active processes. Surface and atmosphere heat balance; volatile budgets; condensate cycles and cloud formation; erosion mechanisms; diurnal, annual and secular variations. Current observations and theories will be critically discussed.

***[1]230. X-Ray Crystallography.** 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

231. Crystal Chemistry and Structure of Minerals. 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 (Sp)

***[1]232. Thermodynamics of Crystals.** Prerequisites: Physical Chemistry (including thermodynamics and some chemical quantum mechanics) and course 233; or consent of instructor. Application of fundamentals of methods for approximating lattice vibrational spectra. Calculation of thermodynamic functions of silicates. Interpretation of experimental data. Systematic variations in thermodynamic functions with crystal structure. Given alternate years.

233. Mineral Physics and Equation of State. 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 states. Mr. Anderson (Sp)

***†234A. Thermodynamic and Geometric Principles of Phase Equilibria.** Prerequisites: course 51C, 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

234B. Petrologic Phase Equilibria. Prerequisites: course 51C, 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. (¼ course each) Prerequisite: Graduate Standing in the Department of Earth and Space Sciences. Seminars presented by staff, outside speakers and graduate students stressing current research in earth and planetary chemistry. Grading on S/U basis. May be repeated for credit.

***†236A. Igneous Petrology.** Prerequisites: course 234A (may be taken concurrently) and a knowledge of differential equations. Solutions of the heat flow equation for specific examples of coiling magmatic bodies; the nature and origin of batholiths and associated rocks. (Alternates yearly with course 236B.)

***†236B. Igneous Petrology.** Prerequisite: course 234A or consent of instructor. Occurrence and origin of mafic and ultramafic rocks. (Alternates yearly with course 236A.) Mr. Watson

238 Metamorphic Petrology. Prerequisite: course 103 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 (Sp)

***†239. Structural Petrology of Deformed Rocks.** Prerequisites: course 51C, 111; 114 or 248 recommended, or consent of instructor. 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. 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. Mrs. Kivelson (W)

241. Sedimentary Petrology. Prerequisites: course 51C; recommended course 141. Texture, composition, structure, and modes or origin of the sedimentary rocks. Content varies from year to year. Mr. Reed (Sp)

***†245A-245B. Stress and Deformation.** Prerequisites: Physics 8A, 8B, Mathematics 31C, 32A, 32B, or consent of instructor. 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. (Offered every third year.) Mr. Oertel (F, W)

***†246. Stress in the Lithosphere.** Prerequisite: courses 202, or 245A or 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. (Offered in alternate years.) Mr. Bird

247. Glaciology. Prerequisite: course 245A or similar course, 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. (Offered every third year.) Mr. Shreve (F)

248. Advanced Structural Geology. Prerequisites: course 111A, 111B, and 111C or 136C. Principles governing fracture, folding, and flow rocks; solutions of structural problems at various scales; regional tectonic problems.

249. Structural Analysis of Deformed Rocks. Prerequisites: courses 111A, 111B, 111C or 136C; 114 or 248 recommended, or consent of instructor. 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 (W)

***†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.

***†251. Seminar in Mineralogy.** Examination of groups of rock-forming minerals (e.g., feldspars) integrating such aspects as crystal structure, crystal chemistry, phase equilibria, and petrogenesis. Mr. Dollase

252. Seminar in Geochemistry. 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. DeNiro (Sp)

253. Seminar in Petrology. 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. To be graded S/U or Letter Grade. Mr. Rosenfeld (F)

254. Seminar in Sedimentology. Processes of sediment transport and deposition; deep sea sediments; deltas and estuaries; petrology of carbonates, sandstones, and lutites; stratigraphy; paleoenvironmental studies. Mr. Reed (F)

255. Seminar in Structural Geology and Tectonics. 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. Glacier physics, theoretical geomorphology, river mechanics, statistical models. Mr. Shreve

257. Seminar in Paleontology. 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. Mr. Loeblich (W)

258. Seminar in Mineral Deposits. Problems of distribution, composition, and formation of mineral deposits; mineral economics; investigations of opaque minerals by microscopic or other techniques. Mr. Carlisle, Mr. Watson (W)

***†259. Seminar in Advance Topics in Geology. (½ to 1 course)** Topics to vary. May be repeated for credit.

***†260. Seminar in Geological Physics. (½ to 1 course).** Problems of current interest in geological physics, including topics related to impact cratering processes, mechanisms of volcano eruption, high pressure properties of materials, and thermodynamics of crystals.

***†261. Topics in Magnetospheric Plasma Physics.** Lectures, discussions and exercises on specific, advanced topics in magnetospheric plasma physics. Previous courses have examined magnetic storms, magnetospheric substorms, ultra-low frequency waves and adiabatic particle motion in the earth's radiation belts.

***†265. Instrumentation, Data Processing, and Data Analysis in Space Physics.** Principles, testing and operations of magnetometers and other instruments. Data processing, display, and archiving. Time-series analysis techniques, including filtering. Fourier series, eigen-analysis, and power spectra. Mr. McPherron

***†M266. Cosmic Ray Physics.** (Same as Astronomy M266.) Cosmic ray composition, origin, acceleration, propagation, intractions with interstellar matter, magnetic field and radiation field, role in interstellar heating, non-thermal galactic radio and galactic x- and gamma-radiation, interaction in the earth's atmosphere. Mr. Lingenfelter

***†268. Seminar in Resource Analysis.** Prerequisite: consent of instructor. Geological, geophysical, economic and technological factors in studies of optimum use of mineral and energy resources. Seminars will emphasize different mineral or energy sources from time to time.

***†270: Energy Production and Environmental Tradeoffs.** Upper Colorado Basin coal and other energy resources of the southwestern states; interest groups involved in exploitation of these resources; impacts of exploitation of these resources on power, water, agriculture and environmental quality. A laboratory course concerning societal issues. Mr. Anderson

M282. Seminar in Geophysics. (Same as Geophysics and Planetary Physics M282.) Prerequisite: consent of instructor. Seismology, geophysical prospecting, electromagnetic prospecting. Selected topics in earth physics. The content will vary from year to year. May be repeated for credit. Mr. Bird (Sp)

***†283. Seminar in Environmental Science and Engineering.** Problems of current interest concerning the interaction of man, technology, and the environment, such as: regional water and energy allocation; earthquake mechanism; geochemistry of pollution; environmental fluid dynamics; engineering geology; environmental geology. May be repeated for credit.

***†284. Seminar in Mineral Physics and Rock Physics. (½ to 1 course)** Prerequisite: courses 233 or 234A. Seminar for students interested in rock physics, mineral physics, and aspects of seismology and petrology. Registered students will present seminars in their research topics. The topics covered will be 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

***[1]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 will vary from year to year. May be repeated for credit. Graded S/U.

286A-288B-286C. Seminar in Planetology. (½ course each) Problems of current interest concerning the moon, planets, and meteorites. To be graded S/U only. May be repeated for credit.

287A-287B-287C. Seminar in Seismology and the Earth's Interior. (½ course each) Problems of current interest in seismology and the earth's interior. To be graded S/U only. May be repeated for credit.

288A-288B-288C. Seminar in Space Physics. (½ course each) Problems of current interest concerning particles and fields in space. To be graded S/U only. May be repeated for credit.

289A-289B-289C. Seminar in Fluid Dynamics. (½ course each) Problems of current interest in fluid dynamics and emphasis on geophysical applications. To be graded S/U only. May be repeated for credit.
Mr. Newman (W)

290. Seminar in Time Series Analysis. (½ course) Discussion of recent research in spectral estimation, filtering, and signal detection applied to geophysical problems. To be graded S/U only. Mr. Jackson (Sp)

***[1]295. Earth and Space Sciences Colloquium. (¼ to ½ course)** Reading and discussion in the frontiers of earth and space sciences.

297. Advanced Techniques in Geological Research. (½ to 1 course) Graded S/U.

298. Topics in Earth and Space Sciences. (½ to 1 course) Mr. Sabins (Sp)

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596. Directed Individual Study and/or Research. (½ to 3 courses) S/U or Letter Grade.

597. Preparation for Master's Comprehensive Examination or Doctoral Qualifying Examination. (½ to 2 courses) To be graded S/U only.

598. Master's Research and Thesis Preparation. (½ to 3 courses) To be graded S/U only.

599. Doctoral Research and Dissertation Preparation. (½ to 3 courses) To be graded S/U only.

Economics

(Office, 2263 Bunche Hall)

Armen A. Alchian, Ph.D., *Professor of Economics.*
William R. Allen, Ph.D., *Professor of Economics.*
Robert W. Clower, D.Litt., *Professor of Economics.*
Michael R. Darby, Ph.D., *Professor of Economics.*
Harold Demsetz, Ph.D., *Professor of Economics.*
George W. Hilton, Ph.D., *Professor of Economics.*
Werner Z. Hirsch, Ph.D., *Professor of Economics.*
Jack Hirshleifer, Ph.D., *Professor of Economics.*
Michael D. Intriligator, Ph.D., *Professor of Economics and Political Science.*
Benjamin Klein, Ph.D., *Professor of Economics.*
Edward E. Leamer, Ph.D., *Professor of Economics.*
Axel Leijonhufvud, PhD., *Professor of Economics (Chair of the Department).*
John J. McCall, Ph.D., *Professor of Economics.*
John G. Riley, Ph.D., *Professor of Economics.*
Lloyd S. Shapley, Ph.D., *Professor of Economics and Mathematics.*
Harold M. Somers, Ph.D., *Professor of Economics.*
Thomas Sowell, Ph.D., *Professor of Economics.*
Earl A. Thompson, Ph.D., *Professor of Economics.*
Finis R. Welch, Ph.D., *Professor of Economics.*
John F. Barron, Ph.D., *Emeritus Professor of Economics.*
Paul A. Dodd, Ph.D., L.L.D., *Emeritus Professor of Economics.*
Earl J. Miller, Ph.D., L.L.D., *Emeritus Professor of Economics.*
Dudley F. Pegrum, Ph.D., *Emeritus Professor of Economics.*
Bryan C. Ellickson, Ph.D., *Associate Professor of Economics.*
George G.S. Murphy, Ph.D., *Associate Professor of Economics.*
Joseph M. Ostroy, Ph.D., *Associate Professor of Economics.*
Robert F. Cotterman, Ph.D., *Assistant Professor of Economics.*
Sebastian Edwards, Ph.D., *Assistant Professor of Economics.*
Daniel Friedman, Ph.D., *Assistant Professor of Economics.*
David D. Friedman, Ph.D., *Assistant Professor of Economics.*
John C. Haltiwanger, Ph.D., *Assistant Professor of Economics.*
David K. Levine, Ph.D., *Assistant Professor of Economics.*
Steven S. Wildman, Ph.D., *Assistant Professor of Economics.*
Benjamin Yu, Ph.D., *Assistant Professor of Economics.*
Sean R. Becketti, M.A., *Acting Assistant Professor of Economics.*
Mark W. Plant, Ph.D., *Assistant Professor of Economics.*
Marc S. Robinson, A.B., *Acting Assistant Professor of Economics.*
Kenneth L. Sokoloff, M.A., *Acting Assistant Professor of Economics.*

Admission Requirements. Applicants for graduate study who satisfy the University minimum requirements are eligible to apply. It is strongly recommended that the student have undergraduate training in economics, mathematics and statistics. Applicants must also submit a full record of prior university experience, three letters of reference and their scores in the Graduate Record Examinations (the General Aptitude and Advanced Economics tests).

The Department admits students *only* for the *Fall* quarter of each academic year. The deadline for submitting the admission/fellowship application is December 31st.

Advising. All graduate advising is handled by the Chair of the Graduate Committee (Room 2263 Bunche Hall). All students are urged to formulate a year's program before the Fall Quarter and to see a faculty adviser at that time. Subsequent meetings with the adviser are urged during the course of the academic year whenever doubts or questions arise about a student's proposed program or educational goals. All students failing to meet University minimum standards are evaluated by the Graduate Chair on a quarterly basis.

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.

Disqualification and Appeal of Disqualification. An annual review of each student's record is made by the Chair of the Graduate Committee. A student not appearing to make satisfactory progress toward the degree will be notified to meet with the Graduate Chair who will determine whether or not to recommend termination to the Graduate Committee. The latter will carefully review the student's record and make the final recommendation. Should the student question the reasons for termination, an appeal by petition must be addressed to the Graduate Committee.

Other Relevant Information. All inquiries concerning admission or general information may be addressed to the Graduate Adviser, Department of Economics, UCLA, Los Angeles, CA 90024.

The Master of Arts Degree

Course Requirements. Candidates for the degree of Master of Arts in Economics have completed normally the equivalent of an undergraduate major in economics. In addition to the general University requirements (see University Minimum Standards), the departmental requirements are nine upper division and graduate level courses in economics completed in graduate status at UCLA. These courses must include:

1. Economics 101A-101B (Intermediate Microeconomic Theory) with a grade of at least B.
2. Economics 102 (Intermediate Macroeconomic Theory) with a grade of at least B.
3. Economics 107 (History of Economic Thought) with a grade of at least C.

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.

Students are also required to have completed, if not previously taken, three courses in mathematics and statistics consisting of 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 the consent of the Graduate Chair, candidates 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. This will not, however, relieve the student from taking five graduate economics courses.

Comprehensive Examination Requirement. The Comprehensive Examination requirement for the master's degree may be met in one of the following three ways:

1. A grade of C (conditional) or better (C– is not acceptable) in each of two full doctoral comprehensive examinations;

2. A satisfactory pass (S) and a conditional pass (C) or better in each of two doctoral examinations with one of the examinations being either the Micro half or the Macro half of the Theory Comprehensive;

3. A grade of S and two grades of C or better in the Quantitative Methods examination and each half of the Theory Comprehensive. A student who achieves a B+ average in Econ. 246B and 246C automatically receives a satisfactory (S) grade in the Quantitative Methods exam.

4. The macro and micro parts of the Theory Exam 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. For the Ph.D. degree, the overall Theory grade will be the lower of the grades on each part, except that if a C+ is achieved on one part and an S− or better on the other part, the overall Theory grade will be an S−. Where a part has been taken more than once, the grade for that part will be the highest grade achieved at any sitting.

Time to Degree. From graduate admission to completion of required courses will normally take three to five quarters. From graduate admission to conferral of degree will take three to six quarters. These estimates vary due to the student's previous preparation, the number of courses taken per quarter while registered, and promptness in fulfilling the comprehensive requirement.

500 Series Course Limitations. Students may offer up to 4 units of Economics 596 ("Individual Study") toward the master's degree. Such a 4-unit course counts as one course toward the minimum graduate course requirement.

The 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 Oral Qualifying Examination. If the language option is chosen, the student shall be 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 chosen, a student 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. Courses in advanced probability and mathematical statistics fulfill the spirit of the requirement. Specifically, the courses in UCLA Mathematics Department numbered 32 and 110 or above fulfill the requirement.

Course Requirements

The specific course requirements which must be fulfilled prior to taking the Oral Qualifying Examination are the following:

A. *Quantitative Methods.* The requirement may be satisfied in any of the following ways:

1. Achieving a B+ average in Econ. 246B and 246C;

2. Achieving a B average in at least two quarters of the advanced econometrics sequence (247, 248, 249);

3. Passing the Quantitative Methods Waiver Examination which is administered at the beginning of the Fall Quarter.

B. *U.S. or European Economic History.* Students must take one upper division undergraduate course in either United States or European economic history with a grade of B or better. The course Econ. 181 ("Development of Economic Institutions in Western Europe") or Econ. 183 ("Development of Economic Institutions in the United States") may be taken to satisfy this requirement.

C. *History of Economic Theory.* Students must take one upper division undergraduate course in the history of economic theory with a grade of C or better. Econ 107 ("History of Economic Theory") may be taken to satisfy this requirement.

Students may petition the Graduate Committee to substitute any one of the above requirements with comparable coursework taken at a previous institution.

Written and Oral Qualifying Examinations.

I. All doctoral students are expected to take the Theory Comprehensive at the end of the Spring Quarter of the first year or in the beginning of the Fall Quarter of the second year.

II. During the second and third years, students shall pass further written examinations in three elective fields.

III. Written examinations are graded "S" (Satisfactory Pass), "C" (Conditional Pass), and "U" (Unsatisfactory). A student is considered to have completed his/her Theory and elective field examinations when he/she has earned at least three S grades and one C grade. A student cannot be advanced to candidacy with more than one conditional grade on his/her record.

IV. The macro and micro parts of the Theory Exam 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. For the Ph.D. degree, the overall Theory grade will be the lower of the grades on each part, except that if a C+ is achieved on one part and an S− or better on the other part, the overall Theory grade will be an S−. Where a part has been taken more than once, the grade for that part will be the highest grade achieved at any sitting.

V. Students may sit for no more than six examinations in the following four comprehensives: Theory and three elective fields.

VI. A special grading rule applies to the Theory Comprehensive. A grade of C+ will be counted as if it were in the Satisfactory range, IF the student has achieved an A− (3.700) average or better in the six theory courses.

VII. The written examinations are offered twice a year, near the beginning of the Fall Quarter and near the end of the Spring Quarter.

VIII. A student, upon petition to the Graduate Committee, may substitute a "special field" for one of the three elective fields. That is, with the consent of the instructors and approval of the chair of the Graduate Committee, a student may combine three related courses (not necessarily in the Department) into a field (e.g., Econ. 245A, 241A, and 241B). Overall evaluation of the student's performance in the field is determined by the instructors, who will consider the three course grades and a related paper which must be completed no later than one year after completion of the sequence. The paper becomes a part of the student's official record.

IX. An *Oral Qualifying Examination*, administered by the student's doctoral committee which is approved by the Dean of the Graduate Division, will be scheduled only after the successful completion of all the written examinations and other course requirements, the foreign language requirement, and on the submission of a written dissertation proposal. The Oral Examination will focus on, but not be limited to, the dissertation proposal.

Final Oral Examination Following Completion of the Dissertation. A Final Oral Examination on the doctoral dissertation is required unless the members of the committee to supervise the dissertation waive it at the time of advancement to doctoral candidacy.

Time to Degree. The Department has established a *5-Year* normative time-to-degree plan which is divided into a 3-year precandidacy period and a 2-year candidacy period. Because of differences in previous preparation, work and other commitments at the University and outside it, and innate capacity, the amount of time necessary to complete the degree has been found to vary widely among the students. The following breakdown by quarters reflects this variance: from graduate admission to Written Qualifying Examinations may take four to six quarters; from graduate admission to a dissertation proposal and Oral Qualifying Examination may take six to nine quarters; from admission to award of degree may take 12 to 18 quarters.

Candidate in Philosophy Degree. A student who has been advanced to candidacy is eligible to receive the C.Phil. degree.

*Graduate Courses

200. Policy Applications of Economic Analysis. Prerequisites: Graduate Standing. Not open to students in the Department of Economics. Survey of the uses of economic theory in public policy applications. Reviews economic analysis in market and non-market systems of economic organization.

201A. Theory of Consumption and Exchange. Preferences, demand, exchange, pricing and markets in an exchange economy. Emphasis is on derivation and interpretation of theorems and illustrated by applications. Mr. Hirschleifer

201B. Theory of Production and Distribution. Theory of the firm with particular attention given to the demand for factors of production in the short- and long-runs. May sometimes cover an introduction to general equilibrium theory and welfare economics. Mr. Welch

201C. Theory of Interest and Capital. Covers the topics of intertemporal choice and equilibrium, interest, and accumulation of capital, decisions under uncertainty, and the allocation of risk. Mr. Alchian

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, and probability and statistics. Norms and facts of decision-making in 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.

M203B. Economics of Information. (Same as Management M203B.) Prerequisites: rudiments of economic theory of the firm, calculus, and probability and statistics; course M203A, or consent or instructor. Optimal decision and information rules. Amount, cost and value of information. Risk aversion, stochastic dominance and their impact on economic decisions in a stochastic environment.

M203C. Economics of Organization. (Same as Management M203C.) Rational models of teams. Relation to the theory of games.

204A-204B. Applications of Economic Theory.

207. History of Economic Theory. Mr. Allen, Mr. Sowell

211. Economic Development. Prerequisites: 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. Prerequisites: 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 the course focuses on a single applied research area for the entire quarter. Mr. Edwards

213A-213B. Selected Problems of Underdeveloped Areas. Lecture, four hours. Seminar 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. Interdependencies within and between these markets will be given particular emphasis. 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. Interdependencies within and between these markets will be given particular emphasis. Mr. Ellickson, Mr. Hirsch

231. Public Finance. Criteria for organization of economic activity by government and by 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. 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. After a discussion of tax incidence and optimal taxation, various taxes will be analyzed: personal income, corporate income, property, capital gains, consumption, and windfall profits. Both the excess burden and the incidence of these tax policies will be examined, with the emphasis placed 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 System Science M222G.) (Formerly numbered Engineering M222G.) Prerequisite: Graduate Standing in Economics or Engineering, consent of instructor. Appropriate mathematics course recommended. 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. Prerequisite: calculus and Introductory Probability. This sequence of courses begins by examining 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. It next explores the ways in which individuals overcome uncertainty by engaging in informational activities. Topics covered include speculation, innovation, market signalling and rational expectations. Third, the emphasis switches from event uncertainty to market uncertainty. Topics will include price searching, queueing, Brownian motion and auction design. Mr. Hirshleifer, Mr. McCall, Mr. Riley

242A-B. Game Theory. Lecture, three hours. Prerequisites: Economics 245A or suitable mathematics courses. Elements of the theory of cooperative and non-cooperative 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. Workshop for dissertation writers and pre-dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Paper required of students, who enroll with instructor's permission. S/U grading. Mr. Intriligator, Mr. Ostroy, Mr. Riley

244. Economic Modeling. Course designed to help students learn to switch back and forth from the precise language of mathematics as they analyze economic phenomena. Emphasis is given to the techniques of multi-variate constrained optimization. Modeling skills are developed by considering a sequence of economic issues, e.g., peak load pricing, regulation monopoly, capital asset pricing, Pareto efficiency. Mr. Riley, Mr. McCall

245A-245B-245C. Advanced Theory and Mathematical Economics. Prerequisite: course 201C or its equivalent elsewhere or consent of instructor. Selected advanced theoretical topics of current interest and an introduction to modern mathematical economics (including general equilibrium theory). Mr. Intriligator, M. Ostroy, Mr. Riley

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. Course includes instruction on use of computer. Students are expected to write a research paper. Mr. Cotterman

247. Single Equation Econometrics. Linear regression, specification error, autocorrelation, non-normality, non-linear estimation, outliers, qualitative dependent variables, aggregation structural change. Mr. Learner

248. Multiple Equation Econometrics. Multivariate regression, error-in-variables, simultaneous equations, proxy variables (latent variables). Mr. Intriligator, Mr. Learner

249. Special Topics in Econometrics. Mr. Intriligator, Mr. Learner, Mr. McCall

251. Labor Economics I. Analysis of wage determination in competitive labor markets. Wage determination extends to schooling and occupational choice. Empirical literature of lifecycle earnings profiles is examined. Special topics include discrimination, minimum wage legislation and unionism. Mr. Welch

252. Labor Economics II. Prerequisites: Econ 251. Models of lifecycle learning and work behavior together with one-period models of labor supply. Special emphasis is upon 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. Workshop for dissertation writers and pre-dissertation writers. Research in progress presented, discussed, and critized by visiting experts, UCLA faculty members, advanced graduate students. Paper required of students, who enroll only with instructor's permission. S/U grading. Mr. Welch

261. Monetary Economics I. Prerequisites: course 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: course 202A-B-C. 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

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

263A-263B-263C. Studies in Monetary Economics. Workshop for dissertation writers and pre-dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Paper required of students, who enroll only with instructor's permission. 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 are analyzed. The firm and the market are then compared from the perspective of alternative arrangements for allocating resources. Traditional problems of competition, monopoly, and industrial concentration are discussed. Course concludes with 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

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. Prerequisite: Graduate Standing. Workshop for dissertation writers and pre-dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Paper required of students who enroll only with instructor's permission. 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 only. Mr. Alchian, Mr. Demsetz, Mr. Klein

C281. Evolution of Economic Institutions in Western Europe. 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. May be concurrently scheduled with course C181 lectures. Mr. Leijonhufvud

282. Soviet Economic Theory and Organization. Course deals both with the overall strategy of planning used by USSR planners and with specific planning methods. Method is interpreted broadly to cover not only instructions and objectives but also institutional arrangements. Intended and unintended outcomes of the methods will be examined. 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. Leamer

293. International Economics: Selected Topics. Mr. Allen, Mr. Leamer

299. Dissertation Research Seminar in Economics. Prerequisite: Advancement to doctoral candidacy. Discussion of research topics and results by dissertation writers and their supervisors. May be taken more than once for credit.

401. The Teaching of Economics 1. (½ course) Prerequisite: enrollment will generally be limited to teaching assistants handling one or more of the quiz sections in Economics 1. Approximately 20 hours divided between meetings of instructor with all section heads to discuss problems of exposition and structuring of course materials, etc., and visits of instructor to the sections of each teaching assistant. S/U grading only. The 2 units of credit will not count towards degree requirements. Student may receive credit no more than twice for the course.

402. The Teaching of Economics 2. (½ course) Prerequisite: enrollment will generally be limited to teaching assistants handling one or more of the quiz sections in Economics 2. Approximately 20 hours divided between meetings of instructor with all section heads to discuss problems of exposition and structuring of course materials, etc., and visits of instructor to the sections of each teaching assistant. S/U grading only. The 2 units of credit will not count towards degree requirements. Student may receive credit no more than twice for the course.

Individual Study and Research

596. Individual Study. (½ to 2 courses) Directed individual study or research. S/U grading.

597. Individual Study: Graduate Examinations. (½ to 2 courses) Directed individual study in preparation for the M.A. comprehensive examination or the Ph.D. qualifying examination. S/U grading.

599. Individual Research: Ph.D. Dissertation. (½ to 2 courses) Directed individual research in preparation of Ph.D. dissertation. Must have been advanced to candidacy. S/U grading.

Education

(Office, 244 Moore Hall)

Marvin C. Alkin, Ed.D., *Professor of Education.*
Alexander W. Astin, Ph.D., *Professor of Education.*
Helen S. Astin, Ph.D., *Professor of Education.*
Eva L. Baker, Ed.D., *Professor of Education.*
Gordon L. Berry, Ed.D., *Professor of Education.*
Nicholas Blurton-Jones, Ph.D., *Professor of Education, Anthropology, and Psychiatry.*
James E. Bruno, Ph.D., *Professor of Education.*
Burton R. Clark, Ph.D., *Professor of Education and Sociology.*
Arthur M. Cohen, Ph.D., *Professor of Education.*
Sol Cohen, Ph.D., *Professor of Education.*
Charlotte A. Crabtree, Ph.D., *Professor of Education.*
Aimee Dorr, Ph.D., *Professor of Education.*
Donald A. Erickson, Ph.D., *Professor of Education.*
Lawrence W. Erickson, Ed.D., *Professor of Education.*
Norma J. Feshbach, Ph.D., *Professor of Education and Psychology.*
John I. Goodlad, Ph.D., L.H.D., LL.D., *Professor of Education and Director of the University Elementary School.*
C. Wayne Gordon, Ph.D., *Professor of Education and Sociology (Chair of the Department).*
Frank M. Hewett, Ph.D., *Professor of Education and Psychiatry.*
Evan R. Keislar, Ph.D., *Professor of Education and Head of Supervised Teaching.*
Barbara K. Keogh, Ph.D., *Professor of Education.*
Frederick C. Kintzer, Ed.D., *Professor of Education.*
Marilyn H. Kourilsky, Ph.D., *Professor of Education.*
Thomas J. La Belle, Ph.D., *Professor of Education.*
John D. McNeil, Ed.D., *Professor of Education.*
C. Robert Pace, Ph.D., *Professor of Education.*
W. James Popham, Ed.D., *Professor of Education.*
Richard J. Shavelson, Ph.D., *Professor of Education.*
Harry F. Silberman, Ed.D., *Professor of Education.*
Rodney W. Skager, Ph.D., *Professor of Education.*
Lewis C. Solmon, Ph.D., *Professor of Education.*
A. Garth Sorenson, Ph.D., *Professor of Education.*
Louise L. Tyler, Ph.D., *Professor of Education.*
Carl Weinberg, Ed.D., *Professor of Education.*
Charles Z. Wilson, Ph.D., *Professor of Education.*
Merlin C. Wittrock, Ph.D., *Professor of Education.*
Melvin L. Barlow, Ed.D., *Emeritus Professor of Education.*
Jesse A. Bond, Ed.D., *Emeritus Professor of Education.*
Watson Dickerman, Ph.D., *Emeritus Professor of Education.*
Wilbur H. Dutton, Ed.D., *Emeritus Professor of Education.*
Claude W. Fawcett, Ph.D., *Emeritus Professor of Education.*
Clarence Fielstra, Ph.D., *Emeritus Professor of Education.*
John A. Hockett, Ph.D., *Emeritus Professor of Education.*
David F. Jackey, Ph.D., *Emeritus Professor of Education.*
B. Lamar Johnson, Ph.D., *Emeritus Professor of Education.*
Wendell P. Jones, Ph.D., *Emeritus Professor of Education.*
George F. Kneller, Ph.D., Litt.D., LL.D., D.Sc., *Emeritus Professor of Education.*
Dorothy M. Leahy, Ed.D., *Emeritus Professor of Education.*
Erick L. Lindman, Ph.D., *Emeritus Professor of Education.*
William H. Lucio, Ph.D., *Emeritus Professor of Education.*
F. Dean McClusky, Ph.D., *Emeritus Professor of Education.*
Lynne C. Monroe, Ed.D., *Emeritus Professor of Education.*
Frances M. Obst, Ed.D., *Emeritus Professor of Education.*
Rosemary Park, Ph.D., LL.D., Litt.D., L.H.D., *Emeritus Professor of Education.*
Paul H. Sheats, Ph.D., LL.D., *Emeritus Professor of Education.*
Lorraine M. Sherer, Ed.D., *Emeritus Professor of Education.*
Samuel J. Wanous, Ph.D., *Emeritus Professor of Education.*
Leigh Burstein, Ph.D., *Associate Professor of Education.*
Simon Gonzalez, Ed.D., *Associate Professor of Education.*
John N. Hawkins, Ph.D., *Associate Professor of Education (Vice Chair of the Department).*
Charles C. Healy, Ph.D., *Associate Professor of Education.*
Antoinette Krupski, Ph.D., *Associate Professor of Education.*
David O'Shea, Ph.D., *Associate Professor of Education and Sociology.*
Val D. Rust, Ph.D., *Associate Professor of Education.*
Romeria Tidwell, Ph.D., *Associate Professor of Education.*
James W. Trent, Ph.D., *Associate Professor of Education.*
Richard C. Williams, Ph.D., *Associate Professor of Education.*
James S. Catterall, M.A., *Assistant Professor of Education.*
Frederick S. Ellett, Jr., Ph.D., *Assistant Professor of Education.*
David P. Ericson, Ph.D., *Assistant Professor of Education.*
Carollee Howes, Ph.D., *Assistant Professor of Education.*

Harold G. Levine, Ph.D., *Assistant Professor of Education.*
Laura Means Pope, J.D., Ed.D., *Assistant Professor of Education.*
Kathleen R. Rockhill, Ph.D., *Assistant Professor of Education.*
Deborah J. Stipek, Ph.D., *Assistant Professor of Education.*
Concepcion Valadez, Ph.D., *Assistant Professor of Education.*
Noreen M. Webb, Ph.D., *Assistant Professor of Education.*
Wellford Wilms, Ph.D., *Assistant Professor of Education.*
Julia C. Wrigley, Ph.D., *Assistant Professor of Education and Sociology.*

•

Marjorie S. Day, Ph.D., *Lecturer in Education.*
Judith S. Margolis, Ph.D., *Adjunct Assistant Professor of Education.*
George D. Thayer, Ed.D., *Lecturer in Education.*

Graduate Degrees

(Master of Education; Master of Arts; Doctor of Education; Doctor of Philosophy)

Admission Requirements.

General Requirements.

Qualifications for admission to a program of study in Education leading to an advanced degree, in addition to the currently specified University requirements for admission to the Graduate Division are:

a. A minimum total score of 1000 on the combined quantitative and verbal sections of the Graduate Record Examination. (NOTE: The Miller Analogies and Doppelt Mathematical Reasoning Test may be substituted for the Graduate Record Examination; minimum scores are 48 and 19 respectively.)

b. Acceptance in a particular specialization is dependent upon the availability of openings in that study field; additionally, 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 status 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 (B in upper division and prior graduate study) and/or Graduate Record Examination score requirements may be admitted to the Graduate School of Education on the basis of other indicators of special promise such as relevant work experience, accomplishments, or public service. Full documentation of the foregoing in the form of recommendations and other types of evidence is essential if these indicators are to be given consideration.

Specialized Requirements by Degree.

a. Master of Education Degree (Requirements applicable in accordance with selected specialization).

(1) Administrative and Policy Studies in Education
Possession of a valid teaching credential is preferred. Persons with a demonstrated commitment to improving American schooling will be sought for admission.

(2) Bilingual/Cross-Cultural Education
Completion of an approved program of professional preparation leading to a preliminary teaching credential; i.e., completion of a specific program of study including student teaching. Classroom experience — as a teacher or aide — for at least two years, at any level of schooling. Evidence of the applicant's professional competence and conscientiousness, as well as the necessary second-language proficiency.

(3) Curriculum and the Study of Schooling
Persons with above-average capabilities and interest in curriculum and instruction will be sought. Experience as a practitioner in the specialization field is advantageous.

b. Master of Arts Degree
(No specialized requirements.)

c. Doctor of Education Degree

(1) A Master of Education Degree or the equivalent.

(2) At least two years of successful professional experience in education or the equivalent. (Must be completed prior to advancement to candidacy.)

d. Doctor of Philosophy Degree

(1) A master's degree, or the equivalent, in either education or the cognate field in which the student proposes to work.

Letters of Recommendation.

Letters of recommendation, while not required, may prove useful in documenting an applicant's qualifications and/or professional experiences.

Brochures.

Departmental brochures may be secured from the following address: Office of Student Services, Graduate School of Education, Moore Hall 201, UCLA, 405 Hilgard Avenue, Los Angeles, California 90024.

Application Forms.

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 Graduate Admissions. Application forms may be obtained from the Education Office of Student Services (address shown above).

Advising

Graduate Adviser.

Joan Wolfgang, Office of Student Services, Moore Hall 202, Graduate School of Education.

For information regarding specialization offerings, the prospective student should consult the Graduate Adviser. All procedural questions should be directed to the *Office of Student Services.* A general orientation meeting for all advanced degree students is held each quarter during the registration period.

Academic Adviser.

At the time of admission to the Graduate School of Education, students are assigned an Academic Adviser within their selected specialization. This assigned Academic Adviser is retained throughout the degree program unless the student changes the field of specialization.

Major Fields or Subdisciplines

Fields of specialization which may be selected in completion of the specific degree programs are indicated below. The applicant is directed to the Education Office of Student Services for information regarding the appropriate 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 Degree:

(a) Administrative and Policy Studies in Education

(b) Bilingual/Cross-Cultural Education

(c) Curriculum and the Study of Schooling

(d) Teacher Education

Master of Arts Degree:

AREA I — SOCIAL AND PHILOSOPHICAL STUDIES IN EDUCATION

(a) Philosophy of Education

(b) Education and the Social Sciences

AREA II — EDUCATIONAL PSYCHOLOGY

(a) Counseling

(b) Early Childhood Development

(c) Learning and Instruction

(d) Research Methods and Evaluation

(e) Special Education

AREA III — ORGANIZATIONAL AND ADMINISTRATIVE STUDIES IN EDUCATION

(a) Education and Work

(b) Higher Education

Doctor of Education Degree:

AREA II — EDUCATIONAL PSYCHOLOGY

(a) Early Childhood Development

(b) Learning and Instruction

(c) Research Methods and Evaluation

(d) Special Education

AREA III — ORGANIZATIONAL AND ADMINISTRATIVE STUDIES IN EDUCATION

(a) Administrative and Policy Studies in Education

(b) Curriculum and the Study of Schooling

(c) Education and Work

(d) Higher Education

NOTE: No specialization fields in Area I, Social and Philosophical Studies in Education, 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 will include specialized content in the selected field of specialization as well as content from related specializations and the major Area of study.

Doctor of Philosophy Degree:

AREA I — SOCIAL AND PHILOSOPHICAL STUDIES IN EDUCATION

(a) Comparative and International Education

(b) Philosophy and History of Education

(c) Education and the Social Sciences

AREA II — EDUCATIONAL PSYCHOLOGY

(a) Counseling

(b) Early Childhood Development

(c) Learning and Instruction

(d) Research Methods and Evaluation

(e) Special Education

AREA III — ORGANIZATIONAL AND ADMINISTRATIVE STUDIES IN EDUCATION

(a) Administrative and Policy Studies in Education

(b) Curriculum and the Study of Schooling

(c) Education and Work

(d) Higher Education

Foreign Language Requirement

There is no foreign language requirement in the Master of Education, the Master of Arts, or the Doctor of Education degree programs.

For the Doctor of Philosophy Degree, there is a foreign language requirement in some specialization fields. Detailed information may be procured from the Graduate Adviser in the Office of Student Services, Moore Hall 202.

Course Requirements

Master's Degrees:

Total number of courses required: A minimum of nine upper division and graduate courses (36 units). Required upper division courses: None.

Master of Education Degree:

Number of graduate courses required for the degree: At least five (20 units) in professional Education (400 series) courses.

Information regarding specific course requirements in a selected M.Ed. specialization may be obtained from the Office of Student Services.

Master of Arts Degree:

Number of graduate courses required for the degree: six courses (24 units) in the 200/500 series; no more than two courses (8 units) may be in the 500 series.

Required graduate courses: Two courses must be selected from:

200A Historical Research and Writing

200B Survey Research Methods in Education

210A Basic Concepts in Educational Research

210B Experimental Design in Educational Research

Additional courses to complete the 36-unit requirement may be selected from offerings of Education and other departments upon approval of the student's adviser.

Doctoral Degrees:

(a) A minimum of three courses beyond the baccalaureate degree in research methods or formal processes of inquiry. Such courses may be taken within or outside of the Department of Education, but must be approved as acceptable for the research methods requirement; at least two courses must be completed in this University.

(b) A minimum of one approved breadth course, including a final examination, in each of four specified breadth categories.

(c) Additional coursework as specified by the student's adviser.

Doctor of Education:

A field experience minimally approximating a 1-course requirement.

Doctor of Philosophy:

(a) A coherent program of a minimum of five graduate courses, or their equivalent, in an approved UCLA cognate department. The five courses constituting a particular cognate sequence shall be determined by the academic adviser in consultation with the student, and approved by the Committee on Graduate Degrees, Admissions, and Standards.

NOTE: The necessity for cognate courses in addition to the stated minimum shall be determined by the student's academic adviser in consideration of the individual's academic preparation.

(b) A research internship minimally approximating a 1-course requirement.

Before the written qualifying examination for a doctoral degree may be taken, the student must have completed all required coursework, or have in progress during the quarter in which the examination will be taken, no more than one required course and one practicum (for Ed.D., Education 499 — Advanced Directed Field Experience; for Ph.D., Education 299 — Research Practicum in Education). The student's academic record must be clear of *Incomplete* grades or *Incomplete* grades turned to *F*.

Teaching Experience

Master of Education Degree:

For some M.Ed. specializations, teaching experience is required. Specific information may be obtained from the Office of Student Services, Moore Hall 202.

Master's Degree Thesis or Comprehensive Examination Plan

Comprehensive examinations for master's degrees are offered twice yearly, once in the Fall Quarter and once in the Spring Quarter at a place designated by the Committee on Graduate Degrees, Admissions, and Standards. For each field of specialization, a comprehensive examination committee comprised of a minimum of three specialization faculty members is appointed by the Specialization Head to prepare and read the examinations for all students in that specialization. The specialization examination committees, as required, are appointed following established deadlines for student admission to the comprehensive examinations.

Master of Education Degree:

No thesis plan is offered in the M.Ed. degree program.

Required examinations:

(a) A comprehensive written examination designed to assess:

(1) Comprehension of the professional knowledge basic to the selected field of specialization including key concepts and principles, major theoretical positions, and fundamental issues.

(2) Understanding of the broad educational context in which the selected professional field resides.

(b) A performance examination designed to assess the student's competency in the solution of problems in the selected professional field; a test not of what the the student knows, but whether knowledge can be applied in a real or simulated professional setting.

Information regarding examination foci for any selected M.Ed. specialization may be secured from the assigned academic adviser.

Master of Arts Degree:

Under the Thesis Plan, the student will prepare a thesis which is a report of the results of original investigation. Before beginning work on the thesis, the student must obtain approval of the subject and general plan from the Graduate School of Education as well as from the resident Education faculty member who has agreed to serve as chair of the thesis committee and who will direct the research and writing of the thesis. Normally, agreement of the faculty member to serve as chair is secured by the student at the completion of two quarters of coursework.

A thesis committee must be formed and a "Petition for Advancement to Candidacy for the Degree Master of Arts" must be filed not later than one quarter prior to completion of course requirements for the degree. The thesis committee consists of three faculty members nominated by the student, recommended by the Department of Education, and appointed by the Dean of the Graduate Division. These three

faculty members may all be from the Department of Education, or one of the three may be from UCLA faculty outside of the Department of Education.

The Manuscript Adviser for Theses and Dissertations and the Graduate Division publication, *Standards and Procedures for Theses and Dissertations* provide guidance in the final preparation of the manuscript. The Department of Education does not require a formal examination in connection with the Thesis 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 the student's knowledge as well as ability to focus that knowledge on specific problems.

For a Master of Education or Master of Arts degree, the comprehensive examination may be taken a maximum of two times. After a second failure of this examination, a student will be allowed to continue in the Graduate School of Education only in highly unusual circumstances. A third attempt to pass an examination will require the consent of the field of specialization and approval of the Committee on Graduate Degrees, Admissions, and Standards. No fourth attempt is possible under any circumstances.

After three failures in the examination, the student must be dropped from the Graduate School of Education at the end of the quarter in which the third failure occurs.

Each examination application requires the written approval of the student's adviser.

Written and Oral Qualifying Examinations for Doctoral Degrees

For the Doctor of Education degree, the student must complete the following written and oral qualifying examinations:

(a) A written examination in the specialization concerned with key concepts and issues in the profession; will draw from specialized content as well as from content of related specialization and the major Area of study.

(b) A professional competency performance examination; includes demonstration of technical and artistic skills; e.g., may utilize simulated school setting or actual field setting to assess skills in decision-making, interaction, information-gathering, problem-solving.

(c) An oral examination conducted by the student's doctoral committee employing topics from education which are related to the student's research proposal.

For the Doctor of Philosophy degree, the student must complete the following Written and Oral Qualifying Examinations:

(a) A written examination in the major Area of study. Half of the examination will be concerned with central topics in the selected Area as a whole; half will focus on the specialized field of study selected within the Area.

(b) An oral examination conducted by the student's doctoral committee employing topics from both education and the cognate discipline which are related to the student's research proposal.

NOTE: For a doctoral degree, research methodology, breadth, and Ph.D. cognate field examinations will be those given in connection with individual courses.

Faculty members in a student's selected specialization and major Area form the doctoral examination committee; typically, the committee membership averages five. Each member of the committee submits questions to the Head of the specialization and participates in determination of the final content of the major examination. Examinations are read and scored by at least two faculty members from the specialization. An additional member is designated to serve as arbiter in the event of disagreement regarding examination results. The written examination is administered through the Committee on Graduate Degrees, Admissions, and Standards; the performance examination for the Doctor of Education degree is administered by the professional examination committee.

The written major examination is offered twice yearly, once in the Fall Quarter and once in the Spring Quarter, at a place designated by the Committee on Graduate Degrees, Admissions, and Standards. This examination is not administered at any other time or place. The examination may be taken only by eligible students who have been recommended by their advisers and who have been admitted to the examination by the Committee on Graduate Degrees, Admissions, and Standards.

Any written qualifying examination may be taken a maximum of two times. After a second failure of an examination, the student will be allowed to continue in the Graduate School of Education only in highly unusual circumstances. A third attempt to pass an examination will require the consent of the field of specialization and approval of the Committee on Graduate Degrees, Admissions, and Standards. No fourth attempt is possible under any circumstances.

After three failures in any specific examination, the student must be dropped from the Graduate School of Education at the end of the quarter in which the third failure occurs.

Each examination application requires the written approval of the student's adviser.

In the quarter preceding the one in which the student plans to take the Oral Qualifying Examination, a request must be filed with the Committee on Graduate Degrees, Admissions, and Standards for admission to the oral examination. At that time, all courses and professional experiences in progress or completed as a part of the program of study will be listed. The Oral Qualifying Examination may be taken a maximum of two times. If a student fails the initial oral examination, the chairperson of the doctoral committee will report the reasons for the failure and recommend to the Committee on Graduate Degrees, Admissions, and Standards either that the student be dropped from the School or be permitted to take the Oral Qualifying Examination a second time together with whatever further requirements are delineated. At least one full quarter must elapse before a second examination will be given. After a second failure of an Oral Qualifying Examination, a student is dropped from the Graduate School of Education.

Doctoral Committee. The doctoral committee is formed subsequent to the student's successful completion of written — and if applicable, performance — qualifying examinations. For the Doctor of Education degree, the Committee consists of three members from the Department of Education and one member from each of two other departments; for the Doctor of Philosophy degree, three members from the Department of Education and two members from departments other than Education — at least one of whom must be from the student's cognate department. This committee, nominated by the Department of Education and appointed by the Dean of the Graduate Division, conducts the Oral Qualifying Examination.

Final Oral Examination Following Completion of the Dissertation. At the option of the certifying members of the doctoral committee, a Final Oral Examination may be required.

Time to Degree

Master's Degree programs:

Graduate admission and admission to a master's program are simultaneous. From graduate admission to completion of required courses, normal progress is from one to two years (3-6 quarters).

From graduate admission to award of the degree, normal progress is from one to two years (3-6 quarters).

The comprehensive examination may be taken during the last quarter of coursework or during a quarter subsequent to completion of coursework.

For the Master of Arts degree, the thesis (if elected in lieu of the Comprehensive Examination Plan) would be written subsequent to completion of coursework.

Doctoral Degree Programs:

From doctoral-program admission to the Written and Oral Qualifying Examinations: three to four years (9-12 quarters).

From doctoral-program admission to the approval of the dissertation prospectus: three to four years (9-12 quarters).

From approval of dissertation prospectus to the Oral Qualifying Examination: same quarter.

From advancement to candidacy to the Final Oral Examination: one year (3 quarters).

From doctoral-program admission to the awarding of the degree: five years (15 quarters).

500 Series Course Limitations for Master's Degrees

Master of Education Degree:

No 500 series courses may be applied toward the Master of Education degree. Education course 597 is available to the M.Ed. student, to be taken on an optional basis. (Maximum credit, 12 units. To be graded S/U.)

Master of Arts Degree:

Course No.	Unit Value	Type of Grading	Maximum Credit
596	2-8	Letter grade	12 units
597	4	S/U	12 units
598	4	S/U	12 units

Number of 500 series courses that may be applied toward the divisional course minimum: 2 courses (8 quarter units)

Number of 500 series courses that may be applied toward the graduate course minimum: 2 courses (8 quarter units) (The minimum graduate course requirement in the Graduate School of Education is six courses.)

Disqualification

Recommendations for termination of graduate status originate with the Committee on Graduate Degrees, Admissions, and Standards or with the faculty of a specialization. The student's adviser will be given the opportunity to review and respond to recommendations for terminating which originate with the Committee.

Specific conditions which may lead to termination include:

Failure to maintain specified required progress toward the degree;

Failure to maintain a grade point average of 3.0 or higher;

For a master's degree, failure of the comprehensive or performance examination, or failure to complete a satisfactory thesis, as applicable;

For a doctoral degree, failure of a qualifying or a required final oral examination.

Instances of suspected infraction of the Academic Senate regulations regarding classroom honesty would be forwarded, following review by the Committee on Graduate Degrees, Admission, and Standards, to the appropriate administrative officer of the University for consideration of disciplinary proceedings against the student.

Appeals

Grievances pertaining to policy and procedures of the School may be formally presented to the Committee on Graduate Degrees, Admissions, and Standards for decision; final appeal of any decision would be to the Dean of the School. Beyond the School setting, instances of continued complaint would be referred to the Dean of the Graduate Division.

Other Relevant Information

Master of Education Degree:

The Master of Education degree is a *professional* master's degree designed to meet the needs of the individual preparing for a mid-level professional position in schooling or for advanced graduate study; it is the appropriate degree to provide professional foundation study in preparation for the Ed.D. program.

A field experience minimally approximating one course is required for all M.Ed. specializations.

Master of Arts Degree:

The Master of Arts degree in Education is an *academic* master's degree 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 for the Ph.D. degree program.

Doctor of Education Degree:

The Doctor of Education degree is a *professional* degree 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.

Doctor of Philosophy Degree:

The Doctor of Philosophy degree in Education is an *academic* degree designed to meet the needs of the individual preparing for a career in basic research or college level instruction. Emphases include theory, research methodology, basic studies, and indepth knowledge in education and a cognate field.

Graduate Courses

Area I:

Social and Philosophical Studies in Education

Fields of Specialization:

Comparative and International Education

Philosophy and History of Education

Education and the Social Sciences

Comparative and International Education

204A. Topics and Issues in International and Comparative Education. Analysis of basic topics and issues in comparative and international education. Emphasis is placed 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. LaBelle, Mr. Rust

204B. Introduction to Comparative Education. An examination of conceptual and methodological questions underlying comparative education. Particular attention is given 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. LaBelle, 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 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. LaBelle

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 are examined, as well as conceptual and practical curricular efforts which intend to increase international understanding. Mr. Hawkins and 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. The types of programs studied include, among others, consciousness raising, community action, skills training, literacy, and extension programs.
Mr. Hawkins, Mr. LaBelle, Mr. Rust

204G. Planning Educational Language Policy Internationally. Analysis of problems and issues involved in formulating a language education policy. Particular attention is given to planning for the use of vernacular languages in education as well as analyzing models and research for multilingual/bilingual education in various countries.

235A. Seminar: Current Problems in Comparative Education.

253B. Seminar: African Education.

253C. Seminar: Asian Education. Mr. Hawkins

253D. Seminar: Latin American Education. Mr. LaBelle

253E. Seminar: European Education. Mr. Rust

253F. Seminar: Education in Revolutionary Societies. A multidisciplinary and comparative study of socialist educational theory is 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 will be explored.
Mr. Hawkins, Mr. LaBelle, Mr. Rust

253G. Seminar: The Asian American and Education. Basic issues and topics related to Asian Americans in the field of education. Examples of these issues and topics are Asian Americans and the community, socioeconomic status, the education-to-work transition, the language and culture question.
Mr. Hawkins

253H. Seminar: The Chicano/Hispanic and Education. Basic issues and topics related to the Chicano and other Hispanic groups in education. Reviews 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.

Philosophy and History of Education

200A. Historical Research and Writing. Techniques of historical research and writing. For students who are or who will be engaged in research, and report or paper or thesis writing, regardless of their field of interest. Mr. S. Cohen

201A. History of Western Education. The rise of the Western Educational tradition; major ideas, institutions, personalities. From the world of the Greeks to that of the Twentieth Century. Mr. S. Cohen

201B. History of American Education to 1860. Development of American education from the 17th Century to the Civil War. The emergence of the public school system in the context of social, intellectual and political change. Mr. S. Cohen

M201C. History of American Education. (Same course as History M264.) The aim is to depict the social forces impinging on American education from the 1860's to the present, and to analyze the relation between these social forces and the philosophy, curriculum, structural organization, and functions of education at all levels. Mr. S. Cohen

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. 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 is on the development of logical and linguistic skills used in the analysis of educational problems and issues.
Mr. Ellett, Mr. Weinberg

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

206E. Philosophy of Education: Introduction to Humanism in Education. Examines the philosophical foundations of humanism and their relationships to educational theory and practice. Mr. Weinberg

250A. Seminar: History of Education. Selected topics in History of Education: discussion, research, and writing. Mr. S. Cohen

250B. Seminar: History of Education. To be given alternate years. Advanced seminar in bibliography and historiography in history of education.
Mr. S. Cohen

251A. Seminar: Philosophy of Education, Epistemology. Prerequisite: consent of instructor.
Mr. Weinberg

251B. Seminar: Philosophy of Education, Behavioral Science Problems in Education — Humanistic Perspectives. Prerequisite: course 206E or consent of instructor.
Mr. Weinberg

251C. Seminar: Philosophy of Education, Behavioral Science Problems — Methodological Perspectives. Prerequisite: course 206C or consent of instructor. Mr. Ellett, Mr. Weinberg

251D. Seminar: Philosophy of Education, Problems in Ethics and Values. Prerequisite: course 206D or consent of instructor. Mr. Ellett

251E. Seminar: Philosophy of Education, Selected Issues.

Education and the Social Sciences

M108. Sociology of Education. (Same as Sociology M143.) Prerequisite: Sociology 1A or 101. 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

200B. Survey Research Methods in Education. Prerequisite: course 210A or equivalent. Problems of conceptualization, organization and gathering non-experimental and quasi-experimental quantitative and qualitative data. Mr. O'Shea

200C. Analysis of Survey Data in Education. Three class hours, two hours of laboratory. Prerequisite: course 200B. Introduction to techniques of processing and analyzing non-experimental and quasi-experimental quantitative data. Mr. O'Shea

203. Educational Anthropology. Prerequisite: Anthropology 22 recommended. Study of education through the research and method of the cultural anthropologist. Interdependence of culture and education with emphasis placed on cross-cultural studies of enculturation, schooling, values, cognition, language, and cultural change. Mr. LaBelle

207. Politics and Education. Course explores the political dimensions of both formal and nonformal educational enterprises in a national and international perspective. Political theory will be explored in the context of such educational issues as policy formation, pressure groups, and public and private elites.
Mr. Hawkins and Staff

208A. Perspectives on the Sociology of Education. Designed to introduce students to sociological perspectives on current issues in educational policy and practice. Issues addressed include desegregation; decentralization, equality of educational opportunity, structure of educational organization, teacher-student relationships, reform in education at the elementary, secondary, post-secondary levels.
Mr. Gordon, 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

252A. Seminar: Educational Organizations. Prerequisite: course 208A or consent of instructor.
Mr. Gordon, Mr. O'Shea, Ms. Wrigley

252B. Seminar: Education and Social Change. Prerequisite: course 208A or consent of instructor.
Mr. LaBelle, Mr. O'Shea

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 inter-racial attitudes.
Ms. Wrigley

M281A-281B-281C. Seminar: Selected Topics in Human Ethology. (Same as Psychiatry M279A-279B-279C and Anthropology M229A-229B-229C). Ethogists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter will cover one level of analysis: describing and recording behavior; causation; development; especially longitudinal studies; adaptation; evolutionary origins.
Mr. Blurton-Jones

Area II:

Educational Psychology

Fields of Specialization:

Counseling

Early Childhood Development

Learning and Instruction

Research Methods and Evaluation

Special Education

Counseling

213A. Fundamental of Student Personnel Work. Prerequisite: graduate student 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 Process in Education. Group productivity, leadership, social perception and attitude formation, decision-making, determination of group interaction variables and the effect of behavior changes in individuals and groups. Mr. Berry, Mr. Sorenson

214A. Counseling Theory and Practice. Application of concepts drawn from cognitive psychology to the non-academic 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. Prerequisite: limited to candidates for advanced degrees 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

214D. Vocational Guidance. Depth study of current interests and needs in vocational guidance; principles, problems and practices of vocational guidance.
Mr. Berry, Mr. Healy

216. Counseling Models from a Cross-Cultural Perspective. Prerequisite: course 213A or 211A and 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 will be systematically covered. Mr. Berry

257. Seminar: Pupil Personnel Services.
Mr. Berry, Mr. Healy, Ms. Tidwell

413A-413B-413C. Internship in School Psychology. Prerequisite: consent of instructor; courses 413A-413B-413C must be completed in three consecutive quarters; limited to students enrolled in the Counseling specialization. Two class hours, sixteen hours of field experience. Working 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 and 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 multi-cultural 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 and 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 will also be discussed. Ms. Tidwell

Early Childhood Development

217A. Child Development and the Educational Process. 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 the family, peer group, and school; application of developmental theory and research to educational practice. Ms. Feshbach, Ms. Howes

217B. Cognitive Development and Education. Theories of cognitive development, including Piaget, and learning theories; application of cognitive developmental theory to educational practice, preschool through high school. Ms. Stipek

M217C. Personality Development and Education. (Same as Psychology M245.) A review of research and theory of critical content areas in personality development that bear upon school performance: self-concept, aggression, sex differences, empathy, and other social behaviors; review of the status of emotional behavior in personality theory and development. Ms. Feshbach, Ms. Stipek

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. Dorr

217E. Developmental Problems in Early Childhood. Prerequisite: Two core courses in development and learning. Problems of atypical development during early childhood viewed from an interactional position which has significance for later learning and education; topics include early identification, implications for school learning, impact of disability on parent-child interactions, and early intervention programs. Ms. Howes, Ms. Keogh

217F. Human Development and the Educational Process. Learning and cognitive-developmental theories of human development and learning; cultural, family and schooling influences on human development; application of developmental theory and research to educational practice. Mr. Howes, Ms. Stipek

256B. Seminar: Special Topics in Development. Prerequisite: consent of instructor.

261A. Seminar: Early Childhood Education. Prerequisite: courses 421A-421B.

421A. Programs, Models and Research in Early Childhood Education. Prerequisite: one course in the development series and one quarter field placement. Introduction to programs and research in early childhood; observation of preschool programs (cooperative nurseries, Headstart, private nurseries, Montessori preschools, day care centers); the organization and evaluation of educational research and its relation to goals of early childhood education.

421C. Research and Evaluation of Early Childhood Programs. Prerequisite: course 421A or equivalent, or by consent of the instructor. Critical review and evaluation of the various preventive and remedial programs for the young child; analysis of relevant research findings and methodological issues with a focus on early childhood education programs.

421D. Parents and Community Agents in Childhood Development. Prerequisite: two courses from the development sequence and 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. Current Perspectives in Early Childhood Development for the Professional. Prerequisite: recommended for professionals in Early Childhood Education. Critical issues and recent developments in the field and practice of Early Childhood; organization, curricula, and program evaluation; policy and legislative factors; day care; parent programs; community participation in programs; cognitive, emotional and exceptional development; early intervention and mental health.

Learning and Instruction

113. Instructional Psychology. Major psychological approaches to teaching. Processes of learning and motivation in the instructional setting. The psychology of teaching methods. Issues in the design and evaluation of instruction. Mr. Keislar

205. Computers in the Educational Process. Introduction to the theory, experimentation, evaluation and the future of computer systems in education, with emphasis on computer-assisted instruction (CAI), computer-managed instruction (CMI), and the use of computers by educational administrators for scheduling, students records, and student performance assessment.

212A. Learning and Education. Models of learning, modeling, reinforcement, motivation, encoding, memory, transfer, individual differences and instruction. Mr. Silberman, Mr. Wittrock

212B. Motivation and Affect in the Educative Process. Prerequisites: courses 210A and 212A. A review of the theoretical and empirical literature on motivational factors in school settings and the conditions for the acquisition of affective outcomes.
Mr. Keislar

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

M215. Personality, Motivation and Attribution. (Same as Psychology M239.) Examines 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 also are stressed. Mr. Weiner

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

256A. Seminar: Special Topics in School Learning. Prerequisite: consent of instructor.
Mr. Keislar, Mr. Wittrock

258A. Seminar: Problems in Instructional Research. Mr. Keislar, Mr. Wittrock

258B. Seminar: Problems in Instructional Development. Ms. Baker, Mr. Keislar

267. Seminar: Educational Technology. Prerequisite: course 433A; 433B recommended.
Ms. Baker, Mr. Silberman

418. Instructional Analysis. (Formerly numbered 420B.) Prerequisite: consent of instructor. Analysis of instructional variables as they relate to diverse types of instructional strategies. The student acquires 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 audio-visual communication media and other instructional programs.

419B. Experimental Analysis of Instructional Program Variables. Two class hours, four hours of laboratory. Prerequisites: courses 210A, 212A, 419A; 210B and 212B or 212C recommended. 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.

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, Mr. Popham

433B. Technological Development in Educational Media. Two class hours, four hours of laboratory. Prerequisite: course 433A, 210A and 212A recommended. Theory, current problems, and anticipated trends in instrumentation and systems development of instructional applications and research; including computer-aided instruction, communication satellites, and other advanced systems; theory and laboratory practice with instrumentation in educational research. Mr. Silberman

Research Methods and Evaluation

210A. Basic Concepts in Educational Research. Fundamentals of research. The language of research. Basic statistical concepts. Planning of research. Interpretation of research outcomes. Introduction to descriptive statistics: mean, median, mode, variance. Introduction to normal curve. It is strongly recommended that all students have this background as a minimum.
Mr. Levine, Mr. Skager, and Staff

210B. Experimental Design in Educational Research. Prerequisite: Knowledge of descriptive statistics. Inference. Randomization test or t-test. Normal curve tests. Analysis of variance: one way and factorial designs. Internal and external threats to the validity of research conclusions.
Mr. Shavelson, Mr. Skager, Ms. Webb

210C. Experimental Design: Advanced Topics. Prerequisite: course 210B or equivalent work. 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 Staff

210D. Experimental Design: Multivariate Analysis. Prerequisite: course 210C or equivalent work. 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. Ms. Webb

211A. The Measurement of Educational Achievement and Aptitude. Prerequisite: course 210A. A critical study of tests of achievement and aptitude with an 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.

211C. Problems in Measurement. Prerequisite: courses 210C and 211B or equivalent work. Generalizability theory and some other statistical theories of mental test scores; implications for the design and interpretation of generalizability and decision studies; advanced topics in validity.
Mr. Burstein, Mr. Shavelson, Ms. Webb

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. Quasi-Experimental Models in Educational Research. Prerequisites: course 218A or the equivalent and consent of instructor. Study of the assumption and limitations inherent in quasi-experimental research designs. The time-series intervention design will be stressed. The students will be able to design an appropriate quasi-experiment to assess the impact of a particular educational intervention.
Mr. Bursetin

218C. Causal Models in Non-Experimental Research. Prerequisites: course 218A or the equivalent and consent of instructor. Study of the inferential bases for the construction and validation of causal models in settings where true experiments are not appropriate. Statistical models from sociology, biology, and econometrics will be discussed. Assumptions and limitations of these models will be stressed.
Mr. Burstein and Staff

219. Laboratory: Advanced Topics in Research Methodology. (½ course) 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

221. Critical Analysis of Empirical Research in Education. Prerequisites: courses 210A and 210B or equivalent background, and consent of instructor. A course examining contemporary empirical research in education and its relevance to educational practice. Designed to develop critical skills in reviewing substantive and methodological aspects of research.
Mr. Shavelson

M222A. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Formerly numbered M222.) (Same as Anthropology 236Q and Psychiatry M235.) Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings will be taught, emphasizing field training and practice in observing behavior. Some of the uses of observations and their implications for research in the social sciences will also be discussed. Students will be expected to integrate observational work into their current research interests. This course may be repeated for credit. Mr. Levine

222B. Design Issues in Naturalistic Research. Prerequisite: course M222A or consent of instructor. Issues in the 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.
Mr. Levine

222C. Qualitative Data Reduction and Analysis. 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 process-product statements, and specific analytic perspectives. Interfacing qualitative and quantitative data also emphasized.
Mr. Levine.

255. Seminar: Special Topics in Measurement and Research Design. Prerequisite: courses 210C and 211C or consent of instructor.
Mr. Burstein, Mr. Skager, Ms. Webb

410. Criterion-Referenced Measurement. An introduction to the field of criterion-referenced measurement insofar as this assessment strategy applies to research, development, and evaluation.
Ms. Baker, Mr. Popham

411A. Introduction to Educational Evaluation. Ways of evaluating the effectiveness of curriculum and instruction, including assessment and improvement of teacher behavior and accomplishment.
Mr. Alkin, Mr. Popham

411B. Evaluation Theory. Course will provide students with a basic understanding of prevalent evaluation theories, with various of the alternative evaluation theories currently being proposed, and with the process of theory development in educational evaluation. Mr. Alkin, Mr. Ellett

411C. Procedural Problems in Evaluation. Assessment methodologies appropriate for evaluation problems. Writing evaluation proposals, developing program monitoring procedures, selecting appropriate evaluation design strategies, coping with ethical considerations in evaluation, framing the decision context, and reporting evaluation results.
Mr. Alkin, Mr. Popham

460. Seminar: Special Issues in Evaluation. Course is offered two or three times per year by different faculty members with different issues taught on a seminar basis. Recent emphases have included: evaluation utilization and cost effectivness evaluation. Mr. Alkin, Ms. Baker, Mr. Popham,

Special Education

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 and 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. Examines 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.

225A. Issues in the Education of Exceptional Individuals. Prerequisite: limited to students in graduate degree programs. Analysis of major research regarding contemporary trends, issues, and programs for the exceptional; consideration of commonalities and differences among exceptional individuals.

225B. Advanced Issues in the Education of Exceptional Individuals. Prerequisite: consent of instructor. Provides a synthesis of developmental and educational theory relevant to the study of exceptional individuals. The course also includes 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.

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

280A. Seminar: Selected Topics in Special Education. (½ course) Prerequisite: consent of instructor.

280B. Seminar: Exceptional Individuals. Prerequisite: admission to a doctoral program.

325A. Laboratory in the Education of Exceptional Individuals. Prerequisite: course 125A or consent of instructor. Six to eight hours per week field work in the UCLA Neuropsychiatric Institute 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 field work in the UCLA Neuropsychiatric Institute School, other campus facilities, or public school special education programs.

425. Appraisal of Exceptional Individuals. Prerequisites: courses 225A and 415A or the equivalent. Individual appraisal of exceptional individuals; analysis of tests and diagnostic procedures, case studies.

501. Cooperative Program in Special Education. (½ to 2 courses) Prerequisite: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair, and Graduate Dean. Limited to UCLA doctoral students in Special Education. This course is used to record the enrollment of UCLA doctoral students in practicum courses taken under cooperative arrangements with California State University, Los Angeles. To be graded S/U.

Area III:

Organizational and Administrative Studies in Education

Fields of Specialization:

Administrative and Policy Studies in Education

Curriculum and the Study of Schooling

Education and Work

Higher Education

Administrative and Policy Studies in Education

240A. School Administrative Practices Since 1900. An examination of school administration since 1900 as it has responded to social, political, and economic pressures exerted on schools. Development of sensitivity to current pressures and alternatives for administrative response. Mr. Williams

241. Research Methodology in School Administration. Prerequisite: consent of instructor. Examination of research problems and strategies in school administration. Mr. Williams

242. Economic Analysis for Educational Policy and Planning. (Formerly numbered 242F.) Prerequisite: Graduate Standing. The applications of economics-based methodologies for analysis of issues in educational policy and planning. Techniques addressing educational problems of organization of activities, classification, prediction, optimization, goal setting, and measuring inequalities are discussed. Mr. Bruno

244. Economics of Education. An introductory course in micro- and macro-economic techniques applied to education. Methodologies as marginal analysis, linear programming, Leontief I-O models, Lorenz curve analysis are discussed with application to school finance, underdeveloped countries, equality of educational opportunity and credentialing. Mr. Bruno, Mr. Solmon

246A. Seminar: Mathematical Modeling in Educational Policy Analysis. Prerequisite: course 242, two years of college level mathematics, knowledge of computer programming, or consent of instructor. Mathematical modeling of educational processes and problems. Deterministic modeling techniques, in addition to stochastic modeling techniques, are discussed. A mathematics review and instruction in the use of the MPS 360 (Mathematical Programming Code) are provided. Mr. Bruno

246B. Seminar: Operations Research—Systems Analysis in Education. Prerequisite: courses 242 and 246A, two years of college level mathematics, computer programming, or consent of instructor. Advanced topics in the application of quantitative analysis to educational policy and planning. Methodologies such as logit models, Bayesian analysis, game theory, differential equation growth models and advanced topics in production and human capital theories will be discussed. Mr. Bruno

246C. Strategic Planning in Education. Problems of goal formulation; interorganizational competition; and control of environmental forces affecting resource utilization, with particular attention to the utility of open-planning models in providing alternative resource-allocation patterns. Mr. Bruno

440B. Problems in Educational Government and Finance. (Formerly numbered 240B.) Intensive study of problems and issues affecting the governance and finance of schools.

440C. Administration of the Instructional Program. (Formerly numbered 240C.) Examination of current educational problems in the society and the strategies of their solution through curriculum policy and practice; instructional design and operation; and in-service training of teaching staffs.

442A. Administration of Large Systems and Individual Schools. (Formerly numbered 242A.) Prerequisite: consent of instructor. Theoretical and functional problems in the administration of large systems and decentralized individual schools.

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. Ms. Pope

442D. Educational Finance. (Formerly numbered 242D.) Historical and theoretical background of educational finance: considers principles related to federal and state participation in educational finance; considers other economic factors related to the provision and utilization of financial resources in schools.

442E. Administration of In-Service Education. (Formerly numbered 242E.) Emphasis on the development of knowledge, skills, and attitudes essential to exercising leadership in the facilitation of the professional growth of teachers, school administrators, and other educational personnel, especially as such growth contributes to instructional improvement and relevant curriculum development.

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 will be issues that impact on minorities; e.g., bilingual education, desegregation, affirmative action, the role of subdominants in the policy-making process.

444A. Legal Aspects of Access to a Public Education. Prerequisite: course 442B or consent of the 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. Ms. Pope

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. Ms. Pope

447. Seminar: Educational Policy and Planning, Special Studies. (Formerly numbered 247.) Prerequisite: consent of instructor.

448A. Urban School Leadership. Prerequisite: consent of instructor. Analysis of the problems of urban school leadership. Emphasis is on the changing nature of the urban principalship; however, considerable attention is given 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.

470A. Seminar: Large Systems and Individual Schools. (Formerly numbered 270A.) Prerequisite: consent of instructor.

470B. Seminar: Educational Government. (Formerly numbered 270B.) Prerequisite: consent of instructor.

Curriculum and the Study of Schooling

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. Miss Crabtree, Mr. Goodlad, Mrs. 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. Miss Crabtree, Mr. Goodlad, Mrs. Tyler

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

260. Seminar: Principles of Curriculum and Instruction. Mr. Goodlad, Mr. McNeil, Mrs. Tyler

261B. Seminar: Elementary Education. Miss Crabtree, Mr. Goodlad, Mr. Wright

261C. Seminar: Secondary Education. Mr. McNeil, Mr. Silberman

262A. Seminar: The Social Studies. Miss Crabtree

262B. Seminar: Reading. Mr. McNeil

262D. Seminar: Language Arts and English.

262F. Seminar: Research Topics in Bilingual/Multicultural Education. Prerequisite: consent of instructor. Ms. Valadez

262J. Seminar: Economic Education. Ms. Kourilsky

268. Seminar: Instructional Analysis. Prerequisite: course 420A. Critical examination of theories of instruction; problems in conceptualizing and researching related instructional, learner, and social-system variables in classroom learning; problems in instructional decision-making and change. Mr. Silberman, Mrs. Tyler

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. Miss Crabtree, Mr. McNeil, Mrs. Tyler

420D. Curriculum: Principles and Practice. An examination and application of various curricular perspectives to questions of purpose, learning opportunities and evaluation. Mr. McNeil, Mrs. Tyler

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. Goodlad, Mr. McNeil, Mrs. Tyler

423. The Humanistic Curriculum. A consideration of the philosophical and cultural foundations of humanistic curricular strategies. Reviews 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. Miss 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.

424F. Curricular Design for Multicultural Education. Prerequisite: course 224 or consent of instructor. Critical analysis of curriculum models currently implemented in multicultural programs. The course will provide a framework for developing and evaluating multicultural curricula. Examination of teaching strategies to meet multicultural needs. Ms. Valadez

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

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

Education and Work

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 post-industrial society. Mr. Healy

M231. The Structure of Occupations. (Same as Sociology M231.) Will explore 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. American Values in the Development of Vocational Education. Course traces social values that supported early vocational education, reviews relevant research, and analyzes potential future directions for vocational education. Mr. Wilms

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

248. 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 are drawn among the major proponents of lifelong learning and implications for schooling are considered. Ms. Rockhill and Staff

261E. Seminar: Education and Work. Mr. Silberman and Staff

262G. Seminar: Business Education. Mr. Erickson

262I. Seminar: Contemporary Issues in Education and Work. Mr. Wilms

337A. The Curriculum in Business Education. The curriculum in business education in secondary schools, including instructional techniques, course content, prognosis of achievement, standards, error analyses, transfer of training, remedial techniques, and evaluation. Mr. Erickson

337B. The Teaching of Secretarial Subjects. A survey and evaluation of procedures and materials used in teaching typewriting, secretarial subjects, office practice and business machines. Mr. Erickson

337C. The Teaching of Bookkeeping, General Business, and Economics. A survey and evaluation of the procedures and materials used in teaching bookkeeping, general business, and economics in secondary schools. Mr. Erickson

436A. Principles and Problems of Business Education. Historical development and principles, practices, and problems in business education in secondary schools and colleges. Mr. Erickson

436B. Business Education in Secondary and Higher Education: Advanced. Advanced study in business education with a critical analysis of significant research applicable to curriculum and teaching practices. Mr. Erickson

436C-436D. Education in Family Finance. Prerequisite: credit toward advanced degrees by petition only. Theories, principles, concepts and research relating to sound personal and family financial management. Mr. Erickson

436E. Evaluation and Field Research in Family Finance Education. (¼ to 1 course) Concepts and principles relating to family finance education and their application to teaching situations. Mr. Erickson

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.

Higher Education

M148. Women in Higher Education. (Same course as Women's Studies Program M148.) Prerequisite: upper division standing. The course examines the education and career development of women in higher education. Specifically, it focuses 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. Focusing on institutional characteristics and students' interpersonal and intrapersonal processes, special emphasis is upon identifying and explaining the effects of the college experience upon student development and achievement. Mr. Trent

M197. Senior Seminar in Women's Studies. (Same course as Women's Studies Program M197). Prerequisites: Women's Studies 100 plus two other Women's Studies courses. Seniors and Juniors by permission 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); refines methods for research. Fulfills social science or humanities breadth requirement. Ms. Astin

209A. History of Higher Education. An examination of the development of post-secondary education in the United States with attention to the social context and to the scope and variety of institutions. Mr. A. Cohen, Ms. Rockhill

209B. Issues in Higher Education. Identification, analysis, and discussion of current issues, innovations, trends, and policies in post-secondary education. Ms. Astin, Mr. A. Cohen, Mr. Kintzer

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

209D. The System of Higher Education. An analysis of the structure and function of American post-secondary education from a systems perspective. Emphasis is given to the structure of the system and to comparative characteristics (faculties, student bodies, finances, outputs) of different types of institutions. Mr. Astin, Mr. Clark

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 organization, precollegiate and post-secondary, are most appropriately studied as complex, professionalized organizations. This course provides a basic understanding of the characteristics of educational institutions and systems as organizations: environmental relations, governance structures and processes, and patterns of decision making.

249A. Seminar: National Evaluations of Post-Secondary 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

259A. Seminar: Research on Characteristics of Students. Mr. Trent

259B. Seminar: Research on Characteristics of Educational Environments.

261D. Seminar: The Community College. Mr. A. Cohen, Mr. Kintzer

261F. Seminar: Higher Education. Mr. Kintzer, Mr. Trent

334. Supervised Teaching: Higher Education. Mr. A. Cohen

430. Higher Education and the Labor Market. From an economic perspective, this course deals with benefits of education; 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 post-secondary education. Mr. Solmon

431A. Administration in Higher Education. An overview of college and university administration. Case studies of administrative problems, policies, and practices. Management information systems, resource allocations, and issues related to responsibility, authority, and participation in administrative decisions.

431B. Curriculum and Instruction in Higher Education. Principles of curriculum and instruction in post-secondary 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. Ms. Rockhill

432. Seminar: Professional Topics in Higher Education. Ms. Astin

461A. Seminar: Adult Education. Ms. Rockhill

461B. Seminar: Adult Education in Other Countries. Ms. Rockhill

461C. Seminar: Community Service and Development Programs in Post-Secondary Education. Mr. Kintzer

Teacher Education

100A. Cultural Foundations of Education. (½ course) Prerequisite: consent of instructor. Analysis of significant problems and issues in contemporary American education using historical, philosophical, sociological and organizational perspectives. Examines the politics of schooling, the organizational structure of school systems, and philosophical concepts of the aims and functions of schooling and education.

100B. Cross-Cultural Foundations of Education. (½ course) Prerequisite: consent of instructor. Analysis of significant problems and issues in the history, culture and current affairs of particular ethnic minority groups in the United States. Patterns of intergroup and school-community relations, and methods for teaching minority students. Includes field experiences.

102. The Mexican-American and the Schools. 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.

112. Psychological Foundations of Education. Prerequisite: consent of instructor. Analysis of learning processes in school situations. Examines 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.

264. Seminar: Teacher Education. Prerequisite: consent of instructor. Examines research, issues and practices in preservice and inservice teacher preparation, evaluation and certification. Social, philosophical and methodological issues, and current trends in America and abroad are studied. Opportunities to observe, participate in and discuss teacher education programs are provided. Mr. Keislar

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.

315A-315B. Principles and Methods for Teaching Reading for Multiple Subject Instruction. (½ course each) (Same as 315C.) Prerequisite: consent of instructor. 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. Both 315A and 315B are required for all teams other than "L". Mr. Keislar

315C. Principles and Methods for Teaching Reading for Multiple Subject Instruction. (Same as 315A-315B.) Prerequisite: consent of instructor. Required for Team "L" students ONLY. 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. Mr. Keislar

316A-316B. Principles and Methods for Teaching Reading for Single Subject Instruction. (½ course each) Prerequisite: consent of instructor. 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. Mr. Keislar

318A-318B.. Principles and Methods for Multiple Subject Instruction. (½ course each) Prerequisites: consent of instructor. 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. Mr. Keislar

320A-320B. Principles and Methods for Single Subject Instruction. (½ course each) Prerequisites: consent of instructor. 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. Mr. Keislar

***324A. Observation and Participation: Multiple Subject Instruction. (½ to 1½ courses)** 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. Mr. Keislar

***324B. Supervised Teaching: Multiple Subject Instruction (½ to 1½ courses)** Prerequisites: course 324A and 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. Mr. Keislar

***324C. Supervised Teaching: Multiple Subject Instruction. (½ to 1½ courses)** Prerequisites: course 324B and 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. Mr. Keislar

324D. Supervised Teaching: Multiple Subject Instruction. (½ to 1½ courses) Prerequisites: course 324C and 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. Mr. Keislar

***330A. Observation and Participation: Single Subject Instruction. (½ to 1½ courses)** 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. Mr. Keislar

330B. Supervised Teaching: Single Subject Instruction (½ to 1½ courses) Prerequisites: course 330A and 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. Mr. Keislar

***330C. Supervised Teaching: Single Subject Instruction. (½ to 1½ courses)** Prerequisites: course 330B and 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. Mr. Keislar

***330D. Supervised Teaching: Single Subject Instruction. (½ to 1½ courses)** Prerequisites: course 330C and 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. Mr. Keislar

480. Learning and Development in Childhood and Adolescence. Prerequisite: consent of instructor. Research and theory from psychology of learning and instruction, and psychology of child and adolescent development applied to practical issues in classroom teaching. Emphasis on intellectual and cognitive development, achievement motivation, self-concept, concept learning, problem solving and individual differences. Mrs. Feshbach, Mr. Wittrock

481. Knowledge and Inquiry in the Classroom. Prerequisite: consent of instructor. Examines the logical features of instruction, and demonstrates their application to inquiry techniques in teaching and learning. Analyzes various conceptions of truth, belief, fact and opinion, and studies their application to classroom learning situations. Mr. Ellett, Mr. Weinberg

482. Society and the Organization of School and Classroom. Prerequisite: consent of instructor. Analysis and resolution of problems of socialization in the classroom. Case study methods will be used to employ social and cultural concepts and social evaluation to the diagnosis and interpretation of classroom teaching problems. Mr. Gordon, Mr. O'Shea

483. Cognitive Processes in Reading. Critical analysis of scholarly studies, theoretical and applied, treating relationships between reading and the mind. Considers implications for teaching of reading. Opportunities for student interaction with foremost scholars in the field, whose studies represent the "growing edge" of research. Mrs. Valadez

484. The Enhancement of Motivation in the School. Comparative study of motivation in school including behavioristic, cognitive, developmental, humanistic approaches. Critical review, with special reference to teaching of reading, of (1) motivational methods to heighten school performance, (2) procedures to foster enduring patterns of constructive motivation in the school. Mr. Keislar

489. Instructional Strategies in Education. Prerequisite: consent of instructor. Analyzes 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. Mrs. Kourilsky

490A. Instructional Decision-Making. (½ to 1½ courses) 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. Mrs. Baker, Mrs. Kourilsky

491A. Curricular Decision-Making. (½ to 1½ courses) 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. Miss Crabtree

492. Evaluation of Teaching and Learning. Prerequisite: consent of instructor. Examines relationship between appraisal instruments and information required for making decisions about teachers, pupils and materials. Introduces recent developments in the evaluation of teaching and learning, and demonstrates the use of modern appraisal techniques in classroom settings. Mr. McNeil, Mr. Popham, Mr. Skager

Independent Study, Research, and Internship

199. Special Studies. (½ to 2 courses) Prerequisite: senior standing and consent of instructor. Independent study of individual problems.

299A-299B-299C. Research Practicum in Education. May be repeated once for credit.

498A-498B-498C. Directed Field Experience. May be repeated once for credit.

499A-499B-499C. Advanced Directed Field Experience. May be repeated once for credit.

596. Directed Independent Study. (½ to 2 courses) Individual study or research for graduate students. Maximum credit, 12 units.

597. Preparation for the Master's Comprehensive Examination or the Doctoral Qualifying Examination. (1 to 3 courses) Individual study for master's degree comprehensive examinations or for qualifying examinations on the Ph.D., or Ed.D. Maximum credit, 12 units. To be graded S/U.

598. Thesis Research. (1 to 3 courses) Research for and preparation of the master's thesis. Maximum credit, 12 units. To be graded S/U.

599. Dissertation Research. (1 to 3 courses) Research for and preparation of the doctoral dissertation. Maximum credit, no limit. To be graded S/U.

Engineering and Applied Science

(Office of the Dean, 7400 Boelter Hall)

Russell R. O'Neill, Ph.D., *Dean.*
Ahmed R. Wazzan, Ph.D., *Associate Dean.*
Alfred C. Ingersoll, Ph.D., *Associate Dean.*
Alan A. Ardell, Ph.D., *Assistant Dean.*
William E. Kastenberg, Ph.D., *Assistant Dean.*
Richard Stern, Ph.D., *Assistant Dean.*

Chemical, Nuclear, and Thermal Engineering Department

(Office, 5405 Boelter Hall)

Douglas N. Bennion, Ph.D., *Professor of Engineering and Applied Science.*
Harry Buchberg, M.S., *Professor of Engineering and Applied Science.*
Ivan Catton, Ph.D., *Professor of Engineering and Applied Science.*
Robert W. Conn, Ph.D., *Professor of Engineering and Applied Science.*

Donald K. Edwards, Ph.D., *Professor of Engineering and Applied Science.*
Traugott H.K. Frederking, Ph.D., *Professor of Engineering and Applied Science.*
Sheldon K. Friedlander, Ph.D., *Professor of Engineering and Applied Science.*
William E. Kastenberg, Ph.D., *Professor of Engineering and Applied Science.*
Eldon L. Knuth, Ph.D., *Professor of Engineering and Applied Science.*
Joseph W. McCutchan, M.S., *Professor of Engineering and Applied Science.*
Anthony F. Mills, Ph.D., *Professor of Engineering and Applied Science.*
Ken Nobe, Ph.D., *Professor of Engineering and Applied Science (Chair of the Department).*
David Okrent, Ph.D., *Professor of Engineering and Applied Science.*
Richard L. Perrine, Ph.D., *Professor of Engineering and Applied Science.*
Gerald C. Pomraning, Ph.D., *Professor of Engineering and Applied Science.*
Lawrence B. Robinson, Ph.D., *Professor of Engineering and Applied Science.*
William D. Van Vorst, Ph.D., *Professor of Engineering and Applied Science.*
Ahmed R. Wazzan, Ph.D., *Professor of Engineering and Applied Science.*
F. Eugene Yates, M.D., *Professor of Medicine and Engineering and Applied Science.*
George E. Apostolakis, Ph.D., *Associate Professor of Engineering and Applied Science.*
Vijay K. Dhir, Ph.D., *Associate Professor of Engineering and Applied Science.*
Vincent L. Vilker, Ph.D., *Associate Professor of Engineering and Applied Science.*
Yoram Cohen, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Steven M. Dinh, Sc.D., *Assistant Professor of Engineering and Applied Science.*
Saeed Fathi-Afshar, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Nasr M. Ghoniem, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Owen I. Smith, Ph.D., *Assistant Professor of Engineering and Applied Science.*

•

Manuel M. Balzer, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Leslie Cave, B.Sc., *Adjunct Professor of Engineering and Applied Science.*
Robert C. Erdmann, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
B. John Garrick, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Julius Glater, M.S., *Adjunct Associate Professor of Engineering and Applied Science.*
Irving M. Pearson, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Milton S. Plesset, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Kenneth A. Solomon, Ph.D., *Adjunct Assistant Professor of Engineering and Applied Science.*
Chauncey Starr, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Robert J. Taylor, Ph.D., *Adjunct Professor of Engineering and Applied Science.*

Computer Science

(Office, 3731 Boelter Hall)

Algirdas A. Avizienis, Ph.D., *Professor of Engineering and Applied Science.*
Bertram Bussell, Ph.D., *Professor of Engineering and Applied Science.*
David G. Cantor, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
Jack W. Carlyle, Ph.D., *Professor of Engineering and Applied Science.*
Wesley W. Chu, Ph.D., *Professor of Engineering and Applied Science.*
[18]Joseph J. DiStefano, III, Ph.D., *Professor of Engineering and Applied Science and Medicine.*
Gerald Estrin, Ph.D., *Professor of Engineering and Applied Science (Chair of the Department).*
Sheila A. Greibach, Ph.D., *Professor of Engineering and Applied Science.*
Walter J. Karplus, Ph.D., *Professor of Engineering and Applied Science.*
Leonard Kleinrock, Ph.D., *Professor of Engineering and Applied Science.*
Allen Klinger, Ph.D., *Professor of Engineering and Applied Science.*
David F. Martin, Ph.D., *Professor of Engineering and Applied Science.*
Lawrence P. McNamee, Ph.D., *Professor of Engineering and Applied Science.*
Michel A. Melkanoff, Ph.D., *Professor of Engineering and Applied Science.*
Richard R. Muntz, Ph.D., *Professor of Engineering and Applied Science.*
[18]Judea Pearl, Ph.D., *Professor of Engineering and Applied Science.*
[18]Jacques J. Vidal, Ph.D., *Professor of Engineering and Applied Science.*
[18]Chand R. Viswanathan, Ph.D., *Professor of Engineering and Applied Science.*
Thomas A. Rogers, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
Daniel M. Berry, Ph.D., *Associate Professor of Engineering and Applied Science.*
Alfonso F. Cardenas, Ph.D., *Associate Professor of Engineering and Applied Science.*
Mijlos D. Ercegovac, Ph.D., *Associate Professor of Engineering and Applied Science.*
[1]Emily P. Friedman, Ph.D., *Associate Professor of Engineering and Applied Science.*
Mario Gerla, Ph.D., *Associate Professor of Engineering and Applied Science.*
Gerald J. Popek, Ph.D., *Associate Professor of Engineering and Applied Science.*
D. Scott Parker, Jr., Ph.D., *Assistant Professor of Engineering and Applied Science.*
David A. Rennels, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Robert C. Uzgalis, *Assistant Professor of Engineering and Applied Science.*

•

Thelma Estrin, Ph.D., *Professor of Engineering and Applied Science in Residence.*
William B. Kehl, A.M., *Adjunct Lecturer in Engineering and Applied Science.*
Leon Levine, M.S., *Senior Lecturer in Engineering and Applied Science.*
D. Scott Parker, Jr., Ph.D., *Assistant Professor of Engineering and Applied Science in Residence.*
David A. Rennels, Ph.D., *Assistant Professor of Engineering and Applied Science in Residence.*
Vance C. Tyree, M.A., *Adjunct Assistant Professor of Engineering and Applied Science.*

Electrical Engineering

(Office, 7732 Boelter Hall)

Nicolaos G. Alexopoulos, Ph.D., *Professor of Engineering and Applied Science.*
Frederick G. Allen, Ph.D., *Professor of Engineering and Applied Science.*
Lee W. Casperson, Ph.D., *Professor of Engineering and Applied Science.*
Francis F. Chen, Ph.D., *Professor of Engineering and Applied Science.*
Robert S. Elliott, Ph.D., *Professor of Engineering and Applied Science.*
Harold R. Fetterman, Ph.D., *Professor of Engineering and Applied Science.*
A. Theodore Forrester, Ph.D., *Professor of Engineering and Applied Science and Physics.*
Neville C. Luhmann, Jr., Ph.D., *Professor of Engineering and Applied Science.*
H. J. Orchard, M.Sc., *Professor of Engineering and Applied Science.*
F. W. Schott, Ph.D., *Professor of Engineering and Applied Science.*
Oscar W. Stafsudd, Jr., Ph.D., *Professor of Engineering and Applied Science.*
Gabor C. Temes, Ph.D., *Professor of Engineering and Applied Science.*
Chand R. Viswanathan, Ph.D., *Professor of Engineering and Applied Science (Chair of the Department).*
Alan N. Willson, Jr., Ph.D., *Professor of Engineering and Applied Science.*
Cavour W. Yeh, Ph.D., *Professor of Engineering and Applied Science.*
Louis L. Grandi, M.S., *Emeritus Professor of Engineering and Applied Science.*
W. D. Hershberger, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
Ellis F. King, M.S., *Emeritus Professor of Engineering and Applied Science.*
Kang-Lung Wang, Ph.D., *Associate Professor of Engineering and Applied Science.*
Jack Willis, B.Sc., *Associate Professor of Engineering and Applied Science.*
Douglas N. Green, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Kenneth W. Martin, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Dee-Son Pan, Ph.D., *Assistant Professor of Engineering and Applied Science.*

•

Aldo G. DiLoreto, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Clifford E. Gilbert, B.Sc., *Visiting Lecturer in Engineering and Applied Science.*
Siegfried G. Knorr, Ph.D., *Adjunct Associate Professor of Engineering and Applied Science.*
Vance C. Tyree, M.S., *Adjunct Assistant Professor of Engineering and Applied Science.*

Engineering Systems

(Office, 7619 Boelter Hall)

Joseph J. DiStefano, III, Ph.D., *Professor of Engineering and Applied Science and Medicine.*
John A. Dracup, Ph.D., *Professor of Engineering and Applied Science.*
Cornelius T. Leondes, Ph.D., *Professor of Engineering and Applied Science.*
John H. Lyman, Ph.D., *Professor of Engineering and Applied Science and Psychology (Chair of the Department).*
[18]Joseph W. McCutchan, M.S., *Professor of Engineering and Applied Science.*
Herbert B. Nottage, Ph.D., *Professor of Engineering and Applied Science.*
Philip F. O'Brien, M.S., *Professor of Engineering and Applied Science.*
Russell R. O'Neill, Ph.D., *Professor of Engineering and Applied Science.*
Judea Pearl, Ph.D., *Professor of Engineering and Applied Science.*
[18]Richard L. Perrine, Ph.D., *Professor of Engineering and Applied Science.*
Allen B. Rosenstein, Ph.D., *Professor of Engineering and Applied Science.*
Moshe F. Rubinstein, Ph.D., *Professor of Engineering and Applied Science.*
Allen R. Stubberud, Ph.D., *Professor of Engineering and Applied Science, Resident at Irvine.*
William W.G. Yeh, Ph.D., *Professor of Engineering and Applied Science.*
Morris Asimow, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
Ralph M. Barnes, Ph.D., *Emeritus Professor of Engineering and Applied Science and Production Management.*
Edward P. Coleman, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
[15]J. Morley English, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
Warren A. Hall, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
W. Julian King, M.E., *Emeritus Professor of Engineering and Applied Science.*
Russell L. Perry, M.E., *Emeritus Professor of Engineering and Applied Science, Resident at Riverside.*

Arthur F. Pillsbury, Engineer, *Emeritus Professor of Engineering and Applied Science.*
Bonham Campbell, E.E., *Associate Professor of Engineering and Applied Science.*
Michael K. Stenstrom, Ph.D., *Associate Professor of Engineering and Applied Science.*

•

Norman C. Dalkey, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Gary L. Gasca, B.A., *Visiting Lecturer in Engineering and Applied Science.*
Julius Glater, M.S., *Adjunct Associate Professor of Engineering and Applied Science.*
Alfred C. Ingersoll, Ph.D., *Professor of Engineering and Applied Science in Residence.*
Don Lebell, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Melvin W. Lifson, Ph.D., *Visiting Lecturer in Engineering and Applied Science.*
Kenneth R. Pfeiffer, Ph.D., *Visiting Lecturer in Engineering and Applied Science and Psychology.*
Robert V. Phillips, B.S., *Adjunct Professor of Engineering and Applied Science.*
Arnold M. Ruskin, Ph.D., *Adjunct Professor of Engineering and Applied Science.*

Materials Science and Engineering

(Office, 6531 Boelter Hall)

Alan J. Ardell, Ph.D., *Professor of Engineering and Applied Science.*
Rointan F. Bunshah, D.Sc., *Professor of Engineering and Applied Science.*
David L. Douglass, Ph.D., *Professor of Engineering and Applied Science.*
William J. Knapp, Sc.D., *Professor of Engineering and Applied Science.*
John D. Mackenzie, Ph.D., *Professor of Engineering and Applied Science (Chair of the Department).*
Kanji Ono, Ph.D., *Professor of Engineering and Applied Science.*
Aly H. Shabaik, Ph.D., *Professor of Engineering and Applied Science.*
George H. Sines, Ph.D., *Professor of Engineering and Applied Science.*
Christian N. J. Wagner, Dr. rer. nat., *Professor of Engineering and Applied Science.*
Alfred S. Yue, Ph.D., *Professor of Engineering and Applied Science.*
Daniel Rosenthal, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
William Klement, Jr., Ph.D., *Associate Professor of Engineering and Applied Science.*

•

Samuel B. Batdorf, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Bruce B. Dunn, Ph.D., *Visiting Associate Professor of Engineering and Applied Science.*
Ryoichi Kikuchi, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Frederick F. Lange, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Martin H. Leipold, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Morris A. Steinberg, D.Sc., *Adjunct Professor of Engineering and Applied Science.*

Mechanics and Structures

(Office 5732 Boelter Hall)

Andrew F. Charwat, Ph.D., *Professor of Engineering and Applied Science.*
Julian D. Cole, Ph.D., *Professor of Engineering and Applied Science and Mathematics.*
Stanley B. Dong, Ph.D., *Professor of Engineering and Applied Science.*
Steven Dubowsky, Sc.D., *Professor of Engineering and Applied Science.*
Kurt Forster, Ph.D., *Professor of Engineering and Applied Science.*
Michael E. Fourney, Ph.D., *Professor of Engineering and Applied Science (Chair of the Department).*
Peretz Friedmann, Sc.D., *Professor of Engineering and Applied Science.*
Gary C. Hart, Ph.D., *Professor of Engineering and Applied Science.*
Robert E. Kelly, Sc.D., *Professor of Engineering and Applied Science.*
Chung-Yen Liu, Ph.D., *Professor of Engineering and Applied Science.*
Ajit K. Mal, Ph.D., *Professor of Engineering and Applied Science.*
William C. Meecham, Ph.D., *Professor of Engineering and Applied Science.*
D. Lewis Mingori, Ph.D., *Professor of Engineering and Applied Science.*
Rokuro Muki, Ph.D., *Professor of Engineering and Applied Science.*
Richard B. Nelson, Sc.D., *Professor of Engineering and Applied Science.*
Lucien A. Schmit, Jr., M.S., *Professor of Engineering and Applied Science.*
[18]George H. Sines, Ph.D., *Professor of Engineering and Applied Science.*
Richard Stern, Ph.D., *Professor of Engineering and Applied Science.*
Russell A. Westmann, Ph.D., *Professor of Engineering and Applied Science.*
Joseph S. Beggs, D.Ing., *Emeritus Professor of Engineering and Applied Science.*
[15]C. Martin Duke, M.S., *Emeritus Professor of Engineering and Applied Science.*
Walter C. Hurty, M.S., *Emeritus Professor of Engineering and Applied Science.*
Tung Hua Lin, D.Sc., *Emeritus Professor of Engineering and Applied Science.*
Antony J.A. Morgan, Ph.D., *Emeritus Professor of Engineering and Applied Science.*
Edward H. Taylor, M.S., *Emeritus Professor of Engineering and Applied Science.*
William T. Thomson, Ph.D., *Emeritus Professor of Engineering and Applied Science, Resident at Santa Barbara.*
Lewis P. Felton, Ph.D., *Associate Professor of Engineering and Applied Science.*
Poul V. Lade, Ph.D., *Associate Professor of Engineering and Applied Science.*
Dixon Rea, Ph.D., *Associate Professor of Engineering and Applied Science.*
Sanford B. Roberts, Ph.D., *Associate Professor of Engineering and Applied Science.*
Lawrence G. Selna, Ph.D., *Associate Professor of Engineering and Applied Science.*
James S. Gibson, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Peter A. Monkewitz, Ph.D., *Assistant Professor of Engineering and Applied Science.*

•

Robert E. Englekirk, Ph.D., *Adjunct Associate Professor of Engineering and Applied Science.*
George J. Tauxe, M.S., *Emeritus Senior Lecturer in Engineering and Applied Science.*
George E. Warren, Ph.D., *Adjunct Professor of Engineering and Applied Science.*
Edward R. Wood, D.Engr., *Adjunct Professor of Engineering and Applied Science.*
Harold T. Yura, Ph.D., *Adjunct Professor of Engineering and Applied Science.*

System Science

(Office, 4532 Boelter Hall)

A. V. Balakrishnan, Ph.D., *Professor of Engineering and Applied Science and Mathematics (Chair of the Department).*
Hector O. Fattorini, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
Stephen E. Jacobsen, Ph.D., *Professor of Engineering and Applied Science.*
Nhan Levan, Ph.D., *Professor of Engineering and Applied Science.*
Bruce L. Miller, Ph.D., *Professor of Engineering and Applied Science.*
Jimmy K. Omura, Ph.D., *Professor of Engineering and Applied Science.*
Izhak Rubin, Ph.D., *Professor of Engineering and Applied Science.*
Paul K. C. Wang, Ph.D., *Professor of Engineering and Applied Science.*
Donald M. Wiberg, Ph.D., *Professor of Engineering and Applied Science and Anesthesiology.*
Kung Yao, Ph.D., *Professor of Engineering and Applied Science.*
Richard E. Mortensen, Ph.D., *Associate Professor of Engineering and Applied Science.*
George J. Ruzicka, Ph.D., *Adjunct Associate Professor of Engineering and Applied Science.*
Eduardo J. Subelman, Ph.D., *Assistant Professor of Engineering and Applied Science.*
Denham S. Ward, Ph.D., *Assistant Professor of Anesthesiology and Engineering and Applied Science.*

The M.S. and Ph.D. Programs

Requirements for Admission

In addition to meeting the requirements of the Graduate Admissions Section of the Graduate Division, applicants for the graduate Engineering programs are required to take the Aptitude Test and Advanced Test of the Graduate Record Examination in engineering, mathematics, or a related area. Applicants for the graduate Computer Science programs are required to take the Graduate Record Examination Aptitude Test and Advanced Test in mathematics or computer science.

A student entering the Engineer/Ph.D. program normally will be expected to have completed the requirements for the master's degree with a scholarship record equivalent at least to a 3.25 grade point average (based on a 4.0 maximum) 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.

Application for Admission forms, including a departmental supplement to the application, may be obtained by writing to the Assistant Dean for Graduate Studies, School of Engineering and Applied Science, UCLA, Los Angeles, CA 90024.

Graduate Students Admitted Provisionally. Graduate students admitted provisionally because of inadequate preparation, are advised that their academic records will be reviewed at the end of each quarter, for a specified period of time. Provisional admission normally requires enrollment in 8 units per quarter of 100/200 series courses in the School of Engineering and Applied Science with no grade lower than a B in any course. If at the end of three quarters of work, or earlier, they fail to show promise as graduate students, or fail to maintain the required minimum grade point average, they will be dismissed from the School. Students who have maintained University and School scholarship requirements, and who

have met any additional requirements that may have been assigned to them, may continue in graduate status in the School of Engineering and Applied Science.

A candidate whose academic background is judged to be deficient may be required to undertake certain remedial coursework, as indicated in the admission letter, which would not be applicable toward the degree. Upon arrival at UCLA, the student's adviser will help the student plan a program which will remedy any such deficiencies.

Advising

Each department in the School of Engineering and Applied Science has a Graduate Adviser. A current list of Graduate Advisers can be obtained from the office of the Assistant Dean for Graduate Studies, Room 6730 Boelter Hall, School of Engineering and Applied Science.

Departmental guidance for Computer Science majors may be obtained by addressing inquiries directly to the Computer Science Department: Departmental Administrator, Computer Science Department, Room 3731 Boelter Hall, Telephone: (213) 825-6396, School of Engineering and Applied Science.

Each graduate student is assigned a faculty adviser upon admission to the School. Advisers may be changed upon the student's written request. All SEAS faculty serve as advisers.

New students should arrange an appointment as early as possible with their faculty advisers to plan the proposed program of study towards the M.S. or Ph.D. degree. Continuing students are required to confer with their advisers at least once a quarter, during enrollment time, when advisers can assess the students' progress and approve the Study List Card. Normally, students are expected to meet with their advisers on a regular basis throughout the quarter.

Based on the quarterly transcripts, students' records are reviewed at the end of each quarter by the Assistant Dean for Graduate Studies in Engineering and Applied Science. Special attention is given to students who were admitted provisionally, or to students on probation. If their progress is unsatisfactory, the students are informed of this in writing, or by appointment with the Assistant Dean or the Departmental Graduate Adviser.

Students are strongly urged to refer to the Engineering *Graduate Student Manual* on procedures and paperwork, and should consult with the Graduate Studies Office administrative staff on the implementation of the policies. In particular, advice should be sought on advancement to candidacy for the M.S. degree, on the procedures for taking Ph.D./Engineer written and oral examinations, and on the use of the Filing Fee. Computer Science students are also encouraged to consult the *UCLA Computer Science Department Quarterly.*

Computer Science Breadth Requirement

Candidates for the M.S. or Ph.D. degrees 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 Computer Science related subjects chosen from the following two groups:

Group 1 (four required courses or equivalents): CS 141, CSM181, CS151A, CS151B

Group 2 (two required courses or equivalents): CS 111; CS 112*; CS 130* or CS 131 or CS 132; CS 171 or CS 174; Math 141B or CS 172 or CS 173

Competence in any or all courses may be demonstrated in one of three ways. These are:

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 a 2.0 unit Computer Science Seminar, CS201, for credit. (Grade "S" for each degree.)

Students in the Computer Science Department who wish to receive a degree in Engineering rather than in Computer Science, should check with the Department for details of the breadth requirement for Engineering majors.

Disqualification and Appeal of Disqualification

Termination of studies is recommended under the following circumstances:

Master of Science Degree (M.S.)

1. Failure to maintain a grade point average of 3.0 both overall *and in the 200 level courses.*

2. Failure to maintain a grade point average of 3.0 in any two consecutive quarters.

3. Failure of the Comprehensive Examination twice.

4. Failure of the thesis committee to approve the thesis.

5. Failure to satisfy the Computer Science Breadth Requirement (for degrees in Computer Science).

6. Unsatisfactory progress toward the degree within the 3- year time limitation for completing all degree requirements.

Doctor of Philosophy (Ph.D.) Degree

1. Failure to maintain a grade point average of 3.25 both overall and in any two consecutive quarters.

2. Failure of the Major Field Written Examination.

3. Failure of the Oral Preliminary Examination.

4. Failure of a Written Minor Field Examination after failing to attain a grade point average of 3.33 in the minor field coursework.

5. Failure of the Oral Qualifying Examination.

6. Failure of the Final Oral Examination.

7. Upon recommendation by an examining committee that an examination should not be repeated.

8. Failure to satisfy the Computer Science Breadth Requirement (for degrees in Computer Science).

9. Unsatisfactory progress toward the degree within the described time limits.

Master of Engineer (M. Engr.) Degree

1. Failure to maintain a grade point average of 3.0 overall.

2. Failure of the Comprehensive Examination.

3. Unsatisfactory progress toward the degree within the desired time limits.

Upon receipt of a written notice of termination, usually preceded by an interview with the Assistant Dean for Graduate Studies or the Departmental Graduate Adviser, the student may appeal to the Graduate Policy Committee of the School of Engineering and Applied Science. The student will submit a written statement to the chair of the Graduate Policy Committee, who will then present the case to the entire committee in one of its regular meetings during the academic year. The Graduate Policy Committee's decision will be considered final by the School of Engineering and Applied Science. Further appeal may be made to the Dean of the Graduate Division (see procedures on Disqualification and Appeal of Disqualification at the beginning of this catalog).

Prerequisite and Other Undergraduate Courses

Not Applicable Toward Graduate Degrees

Engineering

5. Computer Literacy and Appreciation.
10C. Introduction to Programming
10F. Introduction to Programming
10S. Introduction to Programming
11. Patterns of Problem Solving
12. Applied Patterns of Problem Solving
14. Science of Engineering Materials
15. Introduction to Manufacturing Engineering
100. Electrical and Electronic Circuits
100B. Engineering Electromagnetics
100L. Circuit Analysis Laboratory
102. Mechanics of Particles and Rigid Bodies
103A. Elementary Fluid Mechanics
104. Introduction to Experimental Techniques
104C-D. Undergraduate Research Laboratory
105A. Introduction to Engineering Thermodynamics
105D. Transport Phenomena
106A. Principles of Engineering Economy
106B. Introduction to Design and Systems Methodology
106C. Experimental Design Laboratory
106D. Experimental Systems Design Laboratory
108. Introduction to Mechanics of Deformable Solids
109. The Engineer and Society
121C. Systems and Signals
124A. Applied Numerical Computing
127B. Elements of Probability and Information
199B-G. Special Studies

*Courses subject to approval.

Computer Science
20. Programming and Problem Solving
30. Introduction to Computer Operating Systems
99. Individual Programming Projects
199. Special Studies

Individual departments within the School of Engineering may impose certain restrictions on the applicability of other undergraduate courses toward graduate degrees. Please consult with your Departmental Graduate Adviser on departmental requirements and restrictions.

The Master of Science Degree

Course Requirements. A total of nine courses is required for the M.S. degree, 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 either the Engineering or the Computer Science major. In the Thesis Plan, seven of the nine courses must be formal courses, including at least four 200 series graduate courses. The remaining two courses may be Individual Study (Engr. 598) involving work on the thesis. In the Comprehensive Examination Plan, at least five of the nine courses must be 200 series graduate courses; the remaining four courses may be either 200 series graduate or upper division undergraduate courses. No units of 500 series may apply toward the Comprehensive Examination Plan requirements.

Thesis Plan. The thesis must either describe some original piece of research that the student has done, usually, but not necessarily under the supervision of the thesis committee, or else provide a critical exposition of some topic lying in the student's major field of study. The thesis committee is established when the student, in consultation with the faculty adviser, has formulated a thesis research program. All members of the thesis committee are faculty members of the School of Engineering and Applied Science (no outside member is required). The student normally starts to plan the thesis at least one year before the award of the M.S. degree is expected. There is no examination for a student doing a thesis.

Comprehensive Examination Plan. The comprehensive examination committee is comprised of the student's adviser, and two other School of Engineering and Applied Science faculty members chosen by the student and the adviser. Final appointment is made by the Assistant Dean for Graduate Studies. The Comprehensive Examination, which is offered every quarter, is required in written form only. It is recommended that the comprehensive examining committee conduct an oral query of the candiate after review of the written examination. The M.S. program is centered around one major field. Candidates who fail the Comprehensive Examination may be reexamined once, with the approval of the Assistant Dean for Graduate Studies.

Time to Degree. The average length of time for students in the M.S. program is five quarters.

The maximum time allowed for completing the M.S. degree is three years from the time of admission to the M.S. program in the School of Engineering and Applied Science.

Major Fields or Subdisciplines.

The major fields and subdisciplines offered at the M.S. level parallel those listed below for the Ph.D. program. A student is free, however, to propose to the School any other field of study, with the support of his/her adviser.

The Ph.D. Degree

The Engineer (Engr.) Degree

Course Requirements. There is no formal course requirement for the Ph.D. degree, and a student may, theoretically, substitute the coursework by examinations. Normally, however, the student will take courses to acquire the body of knowledge needed for preparation for the Ph.D. Written and Oral Preliminary Examinations. The basic program of study for the Ph.D. degree in Engineering or in Computer Science is built around one major field and two minor fields. The major field has a scope corresponding to a body of knowledge contained in six courses, at least four of which are graduate courses, plus the current literature in the student's area of specialization. Each minor field normally embraces a body of knowledge equivalent to three courses, at least two of which are graduate courses. Grades of B – or better, with a grade point average of at least 3.33 in all courses included in the minor field are required. If a student fails to satisfy the minor field requirements through coursework, a minor field examination may be taken. Under these circumstances, the minor field examination may be taken once only.

Written and Oral Qualifying Examinations. When the student has mastered the body of knowledge defined in the three fields, the student will take a Written Preliminary Examination in the major field. When this examination is successfully passed, and all coursework completed, the student will proceed to take an Oral Preliminary Examination which encompasses the major and minor fields. The Preliminary Examinations (Written and Oral) should be completed within the first two years of full time enrollment in the Ph.D. program. A candidate may not take an examination (written or oral) more than twice.

After the student has demonstrated competence in the three fields, the School will notify the Graduate Division of the student's readiness for the Oral Qualifying Examination.

The details of the Oral Qualifying Examination are at the discretion of the doctoral committee but ordinarily will include a broad inquiry into the student's preparation for research. The doctoral committee also reviews the prospectus of the dissertation at the Oral Qualifying Examination. All members of the committee shall be present and the candidate is considered to have passed if not more than one member votes "not passed".

Time to Degree.

a. From admission to the Ph.D. program to the completion of the Preliminary Examinations: six quarters.

b. From the completion of the Preliminary Examinations to the award of the Ph.D. degree: six quarters.

c. From admission to graduate status (includes M.S. degree) to award of the Ph.D. degree: 15 quarters (normative time-to-degree).

Final Oral Examination Following Completion of the Dissertation. A Final Oral Examination is required of all candidates.

Major Fields or Subdisciplines*

Chemical, Nuclear and Thermal Engineering
- Chemical Engineering
- Heat and Mass Transfer
- Nuclear Science and Engineering

Computer Science Department†
- Computability and Algorithms
- Computer Science Theory
- Computer Methodology: Biological Systems
- Computer Methodology: Cognitive and Knowledge-Based
- Computer Methodology: Physical Systems
- Computer System Architecture
- Computer Programming Languages and Systems
- Computer Network Modeling & Analysis

Electrical Engineering Department
- Applied Plasma Physics
- Circuits
- Electromagnetics
- Quantum Electronics
- Solid State Electronics

Engineering Systems Department
- Applied Dynamic Systems Control
- Water Resource Systems Engineering

Materials Science & Engineering Department
- Ceramics and Ceramic Processing
- Metallurgy and Metal Processing
- Science of Materials

*A student is free to propose to the School any other field of study with the support of his/her adviser. Instructions on the definiton of acceptable ad hoc fields and procedures for their approval are available in the Engineering Graduate Studies Office.

**Established Minor Field only.

†Computer Science majors may pursue additional relevant minor fields of study offered by the School of Engineering and Applied Science.

Mechanics and Structures Department

Applied Dynamic Systems Control
Dynamics
Earthquake Engineering
Fluid Mechanics
Mechanics of Solids
Soil Mechanics
Structures

System Science Department

Communications Systems
Control Systems
Operations Research

School-Wide Fields

**Applied Mathematics
Man-Machine-Environment Systems

School-Wide Programs

Biocybernetics
Manufacturing Engineering

The Engineer (Engr.) Degree

The School of Engineering and Applied Science offers an Engineer degree at a level equivalent to completion of preliminaries in the Ph.D. program. The Engineer (Engr.) degree program has been established to offer a degree which represents a considerable advanced training and competence in the Engineering field, but which 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 for two differences:

(1) The Engineer degree is based on *coursework*. The minimum requirement is 15 (at least nine graduate) courses beyond the bachelor's degree, distributed in the same pattern as in the Ph.D. program: At least six courses in the major field (minimum four graduate courses), and at least three in each minor field (minimum two graduate courses in each).

(2) The time limitation for completing the Engineer degree is three years (nine quarters) from the time of admission.

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, and 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 will also count toward the minimum residence requirement and time limitation for the other program.

The Master of Engineering Degree

Admission Requirements. In addition to the University minimum requirements, the following is required: (a) Five years of responsible full-time professional experience in Engineering; (b) Some formal study in statistics; (c) The Aptitude and Advanced Test of the Graduate Record Examination in engineering, mathematics or a related field. A screening interview with the Coordinator of the Engineering Executive Program is required.

The School of Engineering and Applied Science has a supplement to the Application for Admission which may be obtained at this address: Engineering Executive Program, Room 6288 Boelter Hall, School of Engineering and Applied Science.

Advising. Name and address of Graduate Adviser: Coordinator of the Engineering Executive Program, Room 6288 Boelter Hall, School of Engineering and Applied Science; or Assistant Dean for Graduate Studies, Room 6730 Boelter Hall, School of Engineering and Applied Science.

The Coordinator of the Engineering Executive Program guides the student in completing the prescribed program. The Coordinator holds meetings with the students at least once a year.

Major Field or Subdisciplines. Engineering Management.

Course Requirements. A total of 12 graduate level courses are required for the Master of Engineering degree. They are as follows: Engineering 470A, 470B, 470C, 471A, 472A, 471B, 472B, 471C, 472C, 472D, 473A, 473B.

Comprehensive Examination. The comprehensive examining committee is appointed by the Coordinator of the Engineering Executive Program and consists of three faculty members. The Comprehensive Examination, which is offered once a year and is general in scope, is given in written and oral form. A student who fails this examination may be reexamined once.

Time to Degree. From graduate admission to the conferral of the degree, normal progress is six quarters.

Requirements for the Graduate Certificate of Specialization in Engineering and Applied Science

A certificate of specialization is available in all areas offered by the School of Engineering and Applied Science except Computer 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, 200 series. No work completed for any previously awarded degree or credential can be applied to the certificate. Successful completion of a certificate program requires an overall minimum B average in all courses applicable to the graduate Certificate of Specialization in Engineering and Applied Science. 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 the Engineering Graduate Studies Office, 6730 Boelter Hall.

Courses completed for a Certificate of Specialization in Engineering and Applied Science may subsequently apply toward master's and/or doctoral degrees.

Other Relevant Information. For additional information on the School's teaching and research activities, as well as on the procedures for implementing the above requirements and policies, please refer to the Announcement of the School of Engineering and Applied Science, available in the Engineering Graduate Studies Office, 6730 Boelter Hall.

Graduate Courses

Chemical, Nuclear, and Thermal Engineering

230A. Advanced Engineering Thermodynamics. (Formerly numbered Engineering 230A.) Prerequisites: Engineering 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.

230B. Nonequilibrium Thermodynamics. (Formerly numbered Engineering 230B.) Prerequisite: Chemical, Nuclear and Thermal Engineering 230A. Interpretation of non-equilibrium phenomena in terms of the Fourth Law of Thermodynamics, namely (a) linear interdependence of fluxes and driving forces and (b) Onsager reciprocal relations. Boltzmann transport equation; diffusion; electrical and heat currents; numerical calculation of parameters.

Mr. Robinson

230C. Cryogenics. (Formerly numbered Engineering 238A.) Prerequisite: Engineering 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 (Sp)

230D. Thermodynamics of Phase Transitions. (Formerly numbered Engineering 239A.) Prerequisite: Chemical, Nuclear and Thermal Engineering 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 (Sp)

231A. Convective Heat Transfer Theory. (Formerly numbered Engineering 231A.) Prerequisite: Engineering 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.

Mr. Catton (W)

231B. Radiation Heat Transfer. (Formerly numbered Engineering 231B.) Prerequisite: Engineering 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 (Sp)

231C. Boiling and Condensation. (Formerly numbered Engineering 231C.) (Not the same as 231C prior to Winter Quarter 1978.) Prerequisites: Engineering 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 of liquid metals. Film and dropwise condensation. Mr. Dhir

231D. Application of Numerical Methods to Transport Phenomena. (Formerly numbered Engineering 231D.) Prerequisite: Engineering 131B, 132A or consent of the 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.

231E. Two-Phase Flow Heat Transfer. (Formerly numbered Engineering 231E.) Prerequisites: Engineering 131A, 150A. Generalized constitutive equations for various two-phase flow regimes. Interfacial heat and mass transfer. Equilibrium and non-equilibrium 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 (Sp)

231F. Advanced Heat Transfer. (Formerly numbered Engineering 231F.) (Not open to students who have taken 231C prior to Fall Quarter 1977.) Prerequisites: Chemical, Nuclear and Thermal Engineering 231A. Advanced topics in heat transfer from the current literature. Linear and non-linear theories of thermal and hydrodynamic instability; variational methods in transport phenomena; phenomenological theories of turbulent heat and mass transport. Mr. Catton

232B. Advanced Mass Transfer. (Formerly numbered Engineering 232B.) Prerequisite: Engineering 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 (Sp)

233A. Advanced Power Production and Propulsion. (Formerly numbered Engineering 233A.) Prerequisite: Engineering 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.

234A. Topics in Thermal Design. (Formerly numbered Engineering 234A.) Prerequisite: Engineering 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 will be made by the Staff and occasionally by invited off-campus specialists. Mr. Mills (Sp)

235A. Neutron Transport Theory. Prerequisite: Engineering 135B. The analytical and computational methods used in one speed neutron transport theory. Spatial and angular dependent problems in various approximations; P_N, S_N and diffusion theory; the use of variational and singular eigenfunction methods. Introduction to energy dependence and neutron thermalization. Mr. Pomraning (F)

235B. Energy and Time Dependent Reactor Analysis. Lecture, four hours. Prerequisite: course 235A or consent of instructor. The analytical and computational methods used in energy and time dependent reactor analysis. Multigroup and energy dependent transport theory; B_N, finite difference and variational methods applied to slowing down and resonance phenomena. Time dependent analyses of the reactor as a lumped and distributed parameter system. Mr. Pomraning (W)

235C. Methods of Nuclear Reactor Analysis. (Formerly numbered Engineering 235D.) Lecture, four hours. Prerequisites: Chemical, Nuclear and Thermal Engineering 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 (F, even years)

236A. Nuclear Fuel Element Behavior. (Formerly numbered Engineering 236A.) Prerequisite: Engineering 105A, 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. Pomraning

236B. Radiation Damage in Reactor Materials. (Formerly numbered Engineering 236B.) Prerequisite: Engineering 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. Pomraning

236C. Nuclear Reactor Safety. Lecture, four hours. Prerequisite: Engineering 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. Pomraning (W)

236D. Probabilistic Risk Assessment. (Formerly numbered course 236H.) Lecture, four hours. Prerequisite: Engineering 136A. (Not the same as Chemical, Nuclear, Thermal Engineering 236D prior to Winter Quarter 1982.) 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. Pomraning (Sp)

236E. Advanced Problems in Reactor Design. (Formerly numbered Engineering 236E.) Prerequisite: at least 4 courses from 235A-235B-235C-235D and 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. Pomraning (Sp)

237A. Reaction Kinetics. (Formerly numbered Engineering 232C.) Prerequisites: Engineering 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.

237B. Molecular Dynamics. (Formerly numbered Engineering 232D.) Prerequisite: Engineering 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

237C. Surface Science. (Formerly numbered Engineering 237C.) Prerequisites: Engineering 137C or consent of instructor. Chemical processes at the gas-solid interface. Physics and chemistry of the solid surface, reconstruction, and bulk interactions. Gas scattering and trapping. Mechanism and rate of adsorption and surface reactions on clean and covered surfaces. Experimental techniques in surface science.

237E. Combustion Processes. (Formerly numbered Engineering 232A.) Prerequisite: Engineering 132A or 137C. Fundamentals change equations for multicomponent reactive mixtures, rate laws. Applications: combustion, including burning of (a) premixed gases or (b) condensed fuels. Detonation. Sound absorption and dispersion. Mr. Knuth, Mr. Smith (Sp)

238. Advanced Diffusion and Interfacial Transfer. Prerequisite: Engineering 137E or consent of instructor. Advanced treatment of diffusion and interfacial transfer with applications to industrial separation processes, gas cleaning and pulmonary bioengineering; molecular and phenomenological theories of diffusion; structure of the interface: membrane transport, facilitated transport, active transport; concentration boundary layers, turbulent diffusion.

238A. Chemical Reaction Engineering. (Formerly numbered Engineering 237A.) Prerequisites: Engineering 137B and 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.

238B. Electrochemical Kinetics. (Formerly numbered Engineering 238B.) Prerequisite: one year physical chemistry or equivalent. Study of principles of electrode kinetics and other phenomena associated with metal-electrolyte interfaces. Some applications to engineering processes of current interest such as electrochemical energy conversion (i.e., fuel cells and batteries) and corrosion processes. Mr. Nobe (Sp)

238C. Electrochemical Engineering. (Formerly numbered Engineering 238C.) Prerequisite: one year physical chemistry or equivalent. Transport phenomena in electrochemical systems; relationships between molecular transport, convection, and electrode kinetics will be discussed along with applications to industrial electrochemistry, fuel cell design, and modern battery technology. Mr. Nobe

238D. Biochemical Engineering. (Formerly numbered Engineering 237B.) Prerequisite: Engineering 137C, 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 emphasized. Applications to mass transfer problems in natural and man-made systems. Elementary theory of biochemical reactions. Mr. Vilker

238E. Corrosion Science and Engineering. (Formerly numbered Engineering 138B.) Prerequisite: Engineering 137A, or a course in physical chemistry or equivalent. Fundamentals of electrochemical thermodynamics and kinetics pertinent to corrosion processes are presented. Topics such as corrosion inhibition, passivity, anodic and cathodic protection, pitting, stress corrosion and hydrogen embrittlement will be covered. Optional laboratory experiments will be offered. Mr. Nobe (F)

239AA-239AZ. Special Topics in Chemical Engineering. (½ to 1 course) (Formerly numbered Engineering 239E.) Prerequisite: consent of instructor and additional prerequisites for each offering as announced in advance by the Chemical, Nuclear and Thermal Engineering 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 when no duplication exists.

239BA-239BZ. Seminar: Current Topics in Transport Phenomena. (½ to 1 course) (Formerly numbered Engineering 239B.) Prerequisite: consent of instructor. Lectures, discussions, student presentations and projects in areas of current interest in transport phenomena. All sections are graded S/U only, and may be repeated for credit.

239CA-239CZ. Seminar: Current Topics in Energy Utilization. (Formerly numbered Engineering 239C.) 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. Student reports on selected topics.

239DA-DZ. Seminar: Current Topics in Nuclear Engineering. (½ to 1 course) Prerequisite: consent of instructor. Lectures, discussions, student presentations and projects in areas of current interest in nuclear engineering. All sections are graded S/U and may be repeated for credit. Mr. Pomraning (F,W,Sp)

239EA-239EZ. Seminars in Chemical Engineering. (½ to 1 course) Prerequisite: consent of instructor and additional prerequisites for each offering as announced in advance by the Chemical, Nuclear and Thermal Engineering Department. Lectures, discussions, student presentations and projects in areas of current interest. All sections are graded S/U only, and may be repeated for credit.

239FA-239FZ. Special Topics in Transport Phenomena. (½ to 1 course) Prerequisites: consent of instructor and additional prerequisites for each offering as announced in advance by the CNTE 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 when no duplication exists.

239GA-GZ. Special Topics in Nuclear Engineering. (½ to 1 course) Lecture, two to four hours. Prerequisites: consent of instructor and additional prerequisites for each offering as announced in advance by the Chemical, Nuclear and Thermal Engineering 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 when no duplication exists. Mr. Pomraning (F,W,Sp)

***1239S. Chemical, Nuclear, and Thermal Engineering Department Seminar. (¼ course)** (Formerly numbered Engineering 239S.) Prerequisite: Graduate Standing. A series of lectures by faculty and graduate students in the Department of Chemical, Nuclear and Thermal Engineering. Invited lecturers will also present topics of current interest to Chemical, Nuclear, and Thermal Engineering. To be graded on a S/U basis.

240. Fundamentals of Aerosol Behavior. Prerequisites: Engineering 137E or equivalent. Physics and chemistry of small particle behavior with applications to gas cleaning air pollution and air chemistry. Course is concerned with particles transport and deposition, optical properties and experimental methods, gas-to-particle conversion, and the dynamics of particle size distributions. Mr. Friedlander (W)

M250. Principles of Magnetic Confinement Fusion. (Same as Electrical Engineering M214C.) Prerequisites: Engineering M118, Electrical Engineering 214A, 214B 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 micro-instabilities. Neoclassical diffusion Physics of tokamak and tandem-mirror plasmas. Neutral beams and auxiliary heating. Alternate concepts. Mr. Pomraning (F)

M251. Fusion Reactor Analysis. (Same as Electrical Engineering M214D.) Prerequisite: Engineering M118 or consent of instructor. Fusion reactions, fuel cycles, reactor plasma performance requirements. Methods for burning plasma analysis in e.g., tokamaks, tandem mirrors and laser fusion plasmas. Point plasma kinetics, space-time multifluid hydrodynamics, and kinetic theory models. Driven reactor plasmas. Atomic radiation processes and plasma-wall interactions. Mr. Pomraning (W)

252. Fusion Reactor Technology and Design. (Formerly numbered CNTE M236G) (Same as Electrical Engineering M214E.) Prerequisite: Engineering 135A 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. Pomraning (Sp)

253A-Z. Special Topics in Fusion Physics, Engineering, and Technology. Lecture, four hours. Prerequisites: consent of instructor and additional prerequisites for each offering as announced in advance by the CNTE Department. Advanced treatment of subjects chosen 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 when no duplication exists. Mr. Conn, Mr. Ghoniem, Mr. Pomraning

Computer Science

201. Computer Science Seminar. (½ course) (Formerly numbered Engineering 225S.) Prerequisite: Graduate Standing in computer science. Lectures on current research topics in Computer Science. To be graded on a S/U basis. (May be repeated for credit.) Mr. Berry

202. Advanced Computer Science Seminar. (Formerly numbered Engineering 225X.) 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 will complete one tutorial and one or more original pieces of work in the specialized area. May be repeated for credit. Mr. Estrin (Sp)

212A. Queueing Systems Theory. (Formerly numbered Engineering M223A.) Prerequisites: Computer Science 112, Engineering 120A 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. (Formerly numbered Engineering M223B.) Prerequisite: Computer Science 212A. (Not open for full credit to students who have taken Computer Science 211A prior to Winter Quarter 1981.) 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 ◊ M; computational algorithms for performance measures; asymptotic behavior and bounds; approximation techniques—diffusion—iterative techniques; applications. Mr. Kleinrock, Mr. Muntz (Sp)

215. Computer Communications and Networks. (Formerly numbered Computer Science 212C and Computer Science 255A.) Prerequisite: Computer Science 112. (Not open for full credit to students who have taken Computer Science 212C or 255A prior to Winter Quarter 1981.) 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 will 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, W)

216. Distributed Multiaccess Control in Networks. Lecture, four hours. Prerequisites: Computer Science 212A, 215. Topics drawn from the field of distributed control and access in computer networks will be discussed. These include terrestrial distributed computer networks; satellite packet switching; ground radio packet switching; local network architecture and control. Mr. Kleinrock (Sp)

218A. Network Protocol and Processor Design. Lecture, four hours. Prerequisite: Computer Science 112; (Computer Science 215 recommended). 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. (½ to 3 courses) 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. Student reports on selected topics. May be taken for credit more than once with consent of the 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)

231A. Advanced Topics in Programming Languages. (Formerly numbered Engineering 225P.) Prerequisite: Computer Science 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: Computer Science 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. Mr. Uzgalis (W)

232A. Operational Semantics of Programming Languages. (Formerly numbered Engineering 225K.) Prerequisites: Computer Science 131 and 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. (Formerly numbered Engineering 225L.) Prerequisite: Computer Science 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. D. 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. D. Martin (W)

234C. High Level Language Computer Architecture. Prerequisites: Computer Science 131 and Computer Science 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 (Sp)

239. Current Topics in Computer Science-Programming Languages and Systems. (½ to 4 courses) (Formerly numbered Engineering 226Z.) 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, provided no duplication exists.

241A. Data Management Systems. (Formerly numbered Engineering 226D.) Prerequisites: Computer Science 131 or Management 113A-113B, or equivalent; Computer Science 141 or equivalent. Information and file handling in higher level languages, storage devices and operating systems. Secondary index organizations. Models and architecture of data management systems. Logical and physical structures. Query languages. Commercially available generalized file management and data base management systems. Management information systems.
Mr. Cardenas, Mr. Muntz, Mr. Popek (F,W,Sp)

241B. Data Base, Software, and Information Systems. Prerequisites: Computer Science 131 or Management 113A-113B, and Computer Science 241A, 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: Computer Science 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 (W)

243A. Relational Data Bases. Prerequisites: Computer Science 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: Computer Science 141, Computer Science M123B. 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. The class will include programming exercises.

249. Current Topics in Data Structures. (½ to 3 courses) 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. Student reports on selected topics. May be taken for credit more than once with consent of instructor. (F,W,Sp)

251A. Advanced Computer Architecture. Prerequisites: Computer Science 151A, 151B, and 111, 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: hierachy and management. Communication organization and control.
Mr. Avizienis, Mr. Ercegovac (F,W,Sp)

252A. Computer Science Design: Arithmetic Processors. (Formerly numbered Engineering 225A.) Prerequisite: Computer Science 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. (Formerly numbered Engineering 225C.) Prerequisite: Computer Science 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 (F)

253B. Advanced Topics in Fault-Tolerant Computing. Prerequisite: Computer Science 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, provided no duplication exists.
Mr. Avizienis, Mr. Rennels (Sp)

254A. Computer Memories and Memory Systems. (Formerly numbered Engineering 225D.) Prerequisite: Computer Science 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,Sp)

255B. Distributed Processing and Distributed Data Base System. Prerequisite: Computer Science 255A. Interprocess communications, protocol, interface design, bus structures, system reconfiguration, error recovery. Task partitioning, performance optimization, microprocessor based distributed processing system. File allocation, directory design, deadlock, consistency, synchronization, file availability, query optimization, data translation. Examples, tradeoffs, and design experiences. Mr. Chu

256A. Interactive Computer Graphics. (Formerly numbered Computer Science 274A.) Prerequisite: Computer Science 174 or equivalent. Current topics in interactive computer graphics system design, development, and applications. Mr. Bussell (W)

257A. Computer System Design: Comparative Architecture and Synthesis Methods. (Formerly numbered Engineering 225B.) Prerequisite: Computer Science 252A. Advanced topics in Computer System Architecture. Elucidate important properties of computer systems and study methods for modeling, evaluating, and synthesizing them. Mr. Estrin (W)

M258A-M258B-M258C. LSI in Computer System Design. (Same as Electrical Engineering M258A-M258B-M258C.) Prerequisite: Graduate Standing in Computer Science or Electrical Engineering and consent of instructor. A three quarter interdepartmental graduate course with four units of credit each quarter on LSI/VLSI design principles and application in computer systems.
Mr. Bussell (M258A,(F); M258B,(W); (M258C (Sp)).

259. Current Topics in Computer Science-System Design (Architecture). (½ to 4 courses) (Formerly numbered Engineering 225Z.) 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. Student reports on selected topics. May be repeated for credit, provided no duplication exists.

270A. Computer Methodology: Advanced Numerical Methods. Lecture, four hours. Prerequisites: Graduate Standing in Computer Science or Engineering, and Engineering 124A 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,W,Sp)

271A. Computer Methodology: Continuous Systems Simulation. (Formerly numbered Engineering 224A.) Prerequisites: Computer Science courses M124A and 171. 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 (Sp)

271B. Computer Methodology: Distributed Parameter Systems. (Formerly numbered Engineering 224B.) Prerequisite: Computer Science M124A. 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. (½ course) Prerequisite: Computer Science 271A or eqivalent. 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. Subject to change from quarter to quarter. May be repeated for credit. To be graded on S/U basis. Mr. Karplus (F,W,Sp)

273A. Digital Processing of Engineering and Statistical Data. Prerequisite: Computer Science 173. Computer methods for processing engineering and statistical data. Algorithms to evaluate recursive filter functions, Fourier series, power spectral, analyis correlation computations, and statistical testing.
Mr. McNamee (W)

M274A. Problem Solving and Decision Making. (Same as Engineering Systems M274A.) Prerequisite: Engineering 193A or equivalent. Formal models of problem structures. Heuristic techniques for mechanized problem-solving. Foundations of quantative 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)

M274B. Knowledge-Based Systems. (Same as Engineering Systems M274B.) Prerequisite: Engineering Systems M274A or Computer Science M274A or Computer Science 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 (Sp)

M274C. Computer Methods of Data-Analysis and Model-Formation. (Same as Engineering Systems M274C.) Prerequisite: Engineering 193A or 120A or equivalent, or consent of instructor. Techniques of using computers to interpret, summarize, and form theories of empirical observations. Mathematical analyses of tradeoffs between the computational complexity, storage requirements, and precision of computerized models. Mr. Pearl (Sp)

M274Z. Current Topics in Cognitive Systems. (Same as Engineering Systems M274Z.) Prerequisites: consent of instructor and additional prerequisites for each such 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 when no duplication exists. Mr. Pearl (Sp)

275A. Information Processes in Nervous Systems. (Formerly numbered Engineering 223K.) Prerequisite: consent of the 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 neuropsysiological data. Mr. Vidal (W)

276A. Statistical Pattern Recognition. (Formerly numbered Engineering 225M.) Prerequisite: Graduate Standing, some background in probability such as Engineering 120A, Mathematics 150A-is useful. Computer methodology in the processing of large data sets. Multidimensional measurements. Adaptation and learning the mean of a normal distribution. Bayesian statistics and loss functions. Learning algorithms and clustering processes. Student projects and presentations. Mr. Klinger (W)

276B. Structural Pattern Recognition. Prerequisite: some background in Computer Science such as CS 141, 181 or consent of instructor. Descriptive methods in computer processing of patterened data. Picture description languages, primitives, and formal methods for syntactic analysis, abstraction, and recognition. Introductory material on scene analysis and image processing. Applications to alphanumeric characters, chromosome data, and line drawings. Mr. Klinger (Sp)

276C. Machine Pattern Analysis. (½ course) Prerequisite: Computer Science 276A or equivalent. Advanced research topics in machine processing of patterned data. Topics in pattern recognition, image processing, artifical intelligence, e.g., scene analysis and data structure. May be repeated once for credit, provided no duplication exists. Mr. Klinger (F,W,Sp)

277A. Heuristic Programming and Artificial Intelligence. (Formerly numbered Computer Science 286A.) Prerequisite: Computer Science course 181 or 131 or consent of instructor. Principles underlying the use of computers to perform tasks generally agreed to require some intelligence. The objective is to develop 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. (¼ to 4 courses) (Formerly numbered Engineering 224Z.) 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, provided no duplication exists.

280A-280ZZ. Algorithms. (Formerly numbered System Science 228CA-CZ). Lecture, four hours. Prerequisites: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of Computer Science. 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). With consent of instructor, some offerings in this series may be repeated for credit when no duplication exists. Ms. Greibach (W,Sp)

281A. Computability and Complexity. (Formerly numbered System Science 228B.) Prerequisite: Computer Science 123B or 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. (Formerly numbered System Science 228D.) Prerequisite: consent of instructor; Engineering 128D recommended. 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 (Sp)

284A-284ZZ. Topics in Automata and Languages. (Formerly numbered Computer Science 284XA-284XZ.) Lecture, four hours. Prerequisites: Computer Science 181 and additional prerequisites for each offering as announced in advance by the Computer Science 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). With consent of instructor, some offerings in this series may be repeated for credit when no duplication exists. Ms. Greibach (W)

287A. Theory of Program Structure. (Formerly numbered Computer Science M287A.) Prerequisite: Computer Science 123B or 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)

289A-289ZZ. Current Topics in Computer Theory. (½ to 3 courses) (Formerly numbered Computer Science 289.) 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. Student reports on selected topics.

497D-497E. Field Projects in Computer Science. Prerequisite: consent of instructor. Students will be divided into teams led by the instructor; each team will be assigned an external company or organization which they will investigate as a candidate for possible computerization. They will submit a team report of their findings and recommendations. This course is offered on an In Progress basis which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Mr. Melkanoff (497D, F; 497E, W)

596. Directed Individual or Tutorial Studies. (½ to 2 courses) Prerequisite: Graduate Standing in Engineering; consent of instructor. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. Supervised investigation of advanced technical problems. To be graded on a S/U basis.

597A. Preparation for M.S. Comprehensive Examination. (½ to 3 courses) Prerequisite: Graduate Standing in Engineering; 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. To be graded on a S/U basis.

597B. Preparation for Ph.D. Preliminary Examinations. (½ to 4 courses) Prerequisite: Graduate Standing in Engineering; consent of instructor. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. To be graded on a S/U basis.

597C. Preparation for Ph.D. Oral Qualifying Examination. (½ to 4 courses) Prerequisite: Graduate Standing in Engineering; 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. To be graded on a S/U basis.

598. Research for and Preparation of the Master's Thesis. (½ to 3 courses) Prerequisite: Graduate Standing in Engineering; 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. To be graded on a S/U basis.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 4 courses) Prerequisite: Graduate Standing in Engineering; consent of instructor. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. To be graded on a S/U basis.

Electrical Engineering

201. Electrical Engineering Seminar. (½ course) Lecture, two hours. Prerequisite: Graduate Standing in Engineering. Lectures on current research topics in Electrical Engineering. Graded S/U only. A. N. Willson (F,W,Sp)

210A. Advanced Circuit Theory I. (Formerly numbered Engineering 210A.) Prerequisite: Engineering 110B; concepts of linear algebra and complex function theory. State equations for linear circuits. Characterization of n-ports and multi-terminal elements. Introduction to, and applications of, the scattering matrix, and related topics. Mr. Orchard (F)

210B. Advanced Circuit Theory II. (Formerly numbered Engineering 210B.) Prerequisite: Electrical Engineering 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 non-linear circuits: Liapunov's direct method. Theory of nonlinear transistor circuits. Mr. Wilson (W)

210C. Advanced Network Synthesis. (Formerly numbered Engineering 210C.) Prerequisite: Engineering 110C. Theory and practical development of lossless ladder networks. Loss-phase relations in minimum-phase networks. The Hilbert transform. Allpass functions and networks. Design of linear-phase polynomials. Mr. Orchard, Mr. Temes (W)

210D. Active, Passive, and Digital Filters. (Formerly numbered Engineering 210D.) Prerequisite: Electrical Engineering 210C or consent of instructor. Approximation theory. Realization of passive filters. Electro-mechanical filters. Active filters with lumped and/or distributed elements. Switched and digital filters. Mr. Orchard, Mr. Temes (Sp)

210E. Digital Signal Processing. (Formerly numbered Engineering 210E.) Prerequisite: Engineering 110B. 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)

210F. Theory and Design of Digital Filters. Prerequisite: Electrical Engineering 210E. 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)

213A. Quantum Electronics I. Prerequisite: Engineering 115A or consent of instructor. (Not the same as ESE 213A prior to Fall 1979; not open to students who have taken ESE 215A prior to Fall Quarter 1979.) Review of quantum mechanics, approximation methods, interaction of radiation and matter. Mr. Casperson, Mr. Stafsudd (F)

213B. Quantum Electronics II. Prerequisite: Electrical Engineering 213A or consent of instructor. (Not open for credit to students who have taken Electrical Sciences and Engineering 213A prior to Fall Quarter 1979.) Optical beams and resonators, interaction of light with atoms including amplification and saturation, properties of lasers including power output and mode effects. Mr. Casperson, Mr. Stafsudd (W)

213C. Quantum Electronics III. (Formerly numbered Engineering 213C.) Prerequisite: Electrical Engineering 213B or consent of instructor. Properties of laser oscillators including transient phenomena, quantum mechanical effects, and behavior of high gain laser media. Mr. Casperson, Mr. Stafsudd (Sp)

213D. Quantum Electronics IV. Prerequisite: Electrical Engineering 213B or consent of instructor. (Not open for credit to students who have taken Electrical Sciences and Engineering 213B prior to Winter Quarter 1980.) Quantum electronic systems, modulation, detection, acousto-optics, magneto-optics, nonlinear optics. Raman scattering, Brillouin scattering. Mr. Casperson (Sp, odd years)

213S. Quantum Electronics Seminar. (½ course) (Formerly numbered Engineering 213S.) Prerequisite: Electrical Engineering 213A 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. To be graded on an S/U basis. Mr. Casperson, Mr. Stafsudd

214A. Plasma Waves and Instabilities. (Formerly numbered Engineering 214A.) Prerequisites: Engineering 100B and M118 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)

214B. Advanced Plasma Waves and Instabilities. (Formerly numbered Engineering 214B.) Prerequisites: Engineering M118 or Physics M122, and Electrical Sciences and Engineering 214A or Physics 222. 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)

M214C. Principles of Magnetic Confinement Fusion. (Same as Chemical, Nuclear & Thermal Engineering M250.) Prerequisites: Engineering M118, Electrical Engineering 214A, 214B 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 micro-instabilities. Neoclassical diffusion Physics of tokamak and tandem-mirror plasmas. Neutral beams and auxiliary heating. Alternate concepts. Mr. Chen (F)

M214D. Fusion Reactor Analysis. (Same as Chemical, Nuclear & Thermal Engineering M251.) Prerequisite: Engineering M118 or consent of instructor. Fusion reactions, fuel cycles, reactor plasma performance requirements. Methods for burning plasma analysis in e.g., tokamaks, tandem mirrors and laser fusion plasmas. Point plasma kinetics, space-time multifluid hydrodynamics, and kinetic theory models. Driven reactor plasmas. Atomic radiation processes and plasma-wall interactions. Mr. Chen (W)

M214E. Fusion Reactor Technology and Design. (Formerly numbered Engineering M214E.) (Same as Chemical, Nuclear and Thermal Engineering M252.) Prerequisite: Engineering 135A 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)

215A. Solid State Electronics I. Prequisites: Engineering 115C; Electrical Engineering 213A 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, Mr. K. Wang (F)

215B. Solid State Electronics II. Prerequisite: Electrical Engineering 215A. 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, Mr. K. Wang (W, even years)

215C. Microwave Semiconductor Devices. (Formerly numbered Engineering 215C.) Prerequisite: Engineering 115D. Physical principles and design considerations of microwave solid-state devices: Schottky barrier mixer diodes, IMPATT diodes, transferred electron devices, tunnel diodes, microwave transistors. Mr. Allen, Mr. Pan (Sp)

215D. Electrical Sciences and Engineering: Physics of Semiconductor Devices I. (Formerly numbered Engineering 215D.) Prerequisite: Engineering 115D. Physical principles and design considerations of junction devices. Mr. Allen, Mr. Viswanathan (F)

215E. Electrical Sciences and Engineering: Physics of Semiconductor Devices II. Prerequisite: Engineering 115D. Principles and design considerations of field effect devices, and charge-coupled devices.
Mr. Viswanathan (Sp)

216A. Analog Integrated Circuits. (Not the same as Electrical Sciences and Engineering 216A prior to Fall Quarter 1981.) 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's and A/D's converters.
Mr. K. Martin, Mr. Willis (F)

216B. Advanced Digital Integrated Circuits. (Not the same as Electrical Sciences and Engineering 216B prior to Winter 1981.) Lecture, four hours. Prerequisite: Engineering 116C. Modern logic families (description, analysis and comparison), MSI digital circuits (flipflops, registers, counters, PLA's, etc.). VLSI memories (ROM's, RAM's, CCD's, bubble memories, EPROM's, EEPROM's) and VLSI systems (micro-computers, PIA's, ACIA's, etc.).
Mr. K. Martin (Sp)

216C. Advanced Integrated Circuit Design. Prequisites: Electrical Engineering 216A, 216B; Engineering 116E. 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. K. Martin (Sp)

216D. Microwave amplifiers. (Formerly numbered Electrical Sciences and Engineering 216A.) Prerequisites: Engineering 110B, 116B. (Not open to students who have taken ESE 216A prior to Winter 1981.) 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, even years)

216E. Communication Feedback Circuits. Prerequisites: Engineering 110B. Either Engineering 166D or 120B. (Not the same as Electrical Engineering 216E prior to Fall Quarter, 1982.) Analysis and applications of automatic gain control (AGC) and phase-locked loop (PLL) circuits. Emphasis upon use and design of AGCs and PLLs in Communications Circuits, coherent and non-coherent AGCs, applications of PLLs to carrier and bit syncs, frequency synthesis. Analysis of linear behavior with noise, and nonlinear acquisition. Mr. Green

217A-217B. Advanced Engineering Electrodynamics. (Formerly numbered Engineering 217A-B.) Prerequisites: Engineering 117A, 117B or equivalent. 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
(217A,(F); 217B,(W))

217C. Microwave Circuits. (Formerly numbered Engineering 217C.) Prerequisite: Engineering 117A. Transmission line review; application to strip line and microstrip. Multiport microwave networks; scattering and immittance matrices; devices. Inhomogeneously filled guides. Surface guides. Excitation of guided waves. Periodic structures and filters.
Mr. Elliott, Mr. Schott (Sp, odd years)

217E. Antenna Theory and Design. Prerequisite: Engineering 117B. 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 (Sp, even years)

****219A. Seminars on Advanced Topics in Electromagnetics.** (Formerly numbered Engineering 219A.) Prerequisite: Engineering 117A, 117B or equivalent. Current topics in electromagnetics, such as wave intraction with ferrites, moving media, data processing antennas, waves in statistically varying media, numerical methods applied to electromagnetic problems, holograms and partially coherent waves. May be repeated for credit.

****219B. Seminars on Advanced Topics in Solid State Electronics.** (Formerly numbered Engineering 219B.) Prerequisite: Electrical Engineering 215A, 215B. Current research areas, such as radiation effects in semiconductor devices, diffusion in semiconductors, optical and microwave semiconductor devices, nonlinear optics, and electron emission.

****219D. Special Topics in Electric Circuit Theory.** (Formerly numbered Engineering 219D.) Prerequisite: Electrical Engineering 210B or 210C or 210D. Advanced treatment of topics chosen from reseach areas in electric circuit theory.

****219E. Special Topics in Quantum Electronics.** (Formerly numbered Engineering 219E.) Prerequisite: Electrical Engineering 213A or consent of instructor. Advanced treatment of topics chosen from research areas in quantum electronics such as guided wave optics, unconventional laser systems, optical detection, and coherent optical imagery. May be repeated for credit. Mr. Casperson, Mr. Stafsudd

219X. Advanced Electrical Science and Engineering Seminar. (½ course) (Formerly numbered Engineering 219X.) Prerequisite: passing of the Ph.D. major field examination or instructor's approval. Seminar on current research topics in solid state and quantum electronics (Section 1) or in electronic circuit theory and applications (Section 2). Each student will report on a tutorial topic and on a research topic in his dissertation area. May be repeated for credit. To be graded on S/U basis. Mr. Viswanathan (F,W,Sp)

M258A-M258B-M258C. LSI in Computer System Design. (Same as Computer Science M258A-M258B-M258C.) Prerequisites: Graduate Standing in Computer Science or Electrical Engineering and consent of instructor. A three quarter interdepartmental graduate course with four units of credit each quarter on LSI/VLSI design principles and application in computer system. Mr. Viswanathan (M258A (F); M258B (W); M258C (Sp))

Engineering Systems

***1270A. Synthesis of Industrial Engineering Systems.** (Formerly numbered Engineering 270A.) Prerequisites: design background and Engineering 173 or equivalent. The logic and quantitative formulations for the transdisciplinary design of engineering systems to meet advanced industrial requisites in productivity, profitability, environments, and resource conservation. Facilities, energy, processes, equipment, operations, cost-benefit, and safety considerations. Application areas will vary from year to year.
Mr. O'Brien

271A. Dynamic Systems Optimal Control. (Formerly numbered Engineering 271A.) Prerequisite: Engineering 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. DiStefano, Mr. Leondes (F)

271B. Dynamic Systems Stochastic Estimation and Control. (Formerly numbered Engineering 271B.) Prerequisites: Engineering 171C, 193A; Engineering Systems 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. DiStefano, Mr. Leondes (W)

271C. Dynamic Systems Identification, Stability and Adaptive Control. (Formerly numbered Engineering 271C.) Prerequisite: Engineering Systems 271A; 271B is recommended; or consent of instructor. 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 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)

M274A. Problem Solving and Decision Making. (Formerly numbered Engineering 274A.) (Same as Computer Science M274A.) Prerequisite: Engineering 193A or equivalent. Formal models of problem structures. Heuristic techniques for mechanized 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)

M274B. Knowledge-Based Systems. (Formerly numbered Engineering Systems 274B.) (Same as Computer Science M274B.) Prerequisites: Engineering Systems M274A or Computer Science M274A or Computer Science 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 (Sp)

M274C. Computer Methods of Data-Analysis and Model Formation. (Formerly numbered Engineering Systems 274C.) (Same as Computer Science M274C.) Prerequisite: Engineering 193A or 120A or equivalent, or consent of instructor. Techniques of using computers to interpret, summarize and form theories of empirical observations. Mathematical analyses of tradeoffs between the computational complexity, storage requirements and precision of computerized models. Mr. Pearl (Sp)

274J. Multiattribute Decision Making with Conflicting Objectives. Prerequisite: Engineering 174A or Engineering Systems 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 on System Representation. (Formerly numbered Engineering 274K.) Prerequisite: Engineering Systems 274J or consent of instructor. Mathematical and conceptual models used in analysis and synthesis of Engineering, Socio-Technical 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)

M274Z. Current Topics in Cognitive Systems. (Formerly numbered Engineering Systems 274Z.) (Same as Computer Science M274Z.) Prerequisites: consent of instructor and additional prerequisites for each such 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 when no duplication exists. Mr. Pearl

***1276A. Computer-Aided Design.** (Formerly numbered Engineering 276A.) Prerequisites: Engineering 106B or equivalent and 129L. Seminar in computer-aided design of engineering systems and products. Organization of the design process, its decision points and back-up information, for automatic machine processing of the specifications to provide full design data for a family of products. Mr. Rosenstein

***1277A. Advanced Engineering Economics I.** (Formerly numbered Engineering 277A.) Prerequisites: Engineering 177A and 177B or equivalent or consent of instructor. Optimal investment decisions. Advanced theory of capital and its relationship to economic growth. Role of technology in economic development. Theoretical basis for cost of capital and discount rates in private and public sectors. Working capital decisions. Applications to engineering projects.

***1277B. Advanced Engineering Economics II: Seminar.** (Formerly numbered Engineering 277B.) Prerequisite: Engineering Systems 277A or equivalent or consent of instructor. The economics of engineering and social systems. Long-range investment concepts. Physical analogy to Walras' model. An entropy approach to financial decision making. Term projects.

280A. Advanced Biotechnology. (Formerly numbered Engineering 280A.) Prerequisite: Engineering 180A or 180B or consent of instructor. Review and analysis of contemporary bioscience research which bears on problems of engineering component and system design. Emphasis is on methodological and scientific factors underlying man-machine-environment interactions. Mr. Lyman, Mr. O'Brien (W)

280B. Advanced Biotechnology. (Formerly numbered Engineering 280B.) Prerequisite: Engineering 180A or 180B 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)

284A. Surface Water Hydrology. (Formerly numbered Engineering 284A.) Prerequisite: Engineering 184A or consent of instructor. In-depth study of the surface water components of the hydrologic cycle. Instantaneous units 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. W. Yeh (W)

284B. Groundwater Hydrology. (Formerly numbered Engineering 284B.) Prerequisite: Engineering 184A or consent of instructor. Theory of the movement and occurrence of water in subterranean aquifiers. Steady flow in confined and unconfined aquifiers. Mechanics of wells; steady and unsteady radial flows in confined and unconfined aquifiers. Theory of leaky aquifiers. Sea Water intrusion. Numerical methods. Applications. Mr. Dracup, Mr. W. Yeh (Sp)

284C. Water Resources Systems Engineering. (Formerly numbered Engineering 284C.) Prerequisites: Engineering 129L, 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 is on the management of water quantity.
Mr. Dracup, Mr. W. Yeh (Sp)

284D. Advanced Water Quality Control Systems. (Formerly numbered Engineering 284D.) Prerequisite: Engineering 184D. Physical, chemical and biological bases for design of advanced water and wastewater quality control systems. Includes treatment processes, standards and requirements; concepts in physical, organic and colloidal chemistry; bacteriology and limnology; reservoir, stream, estuary, and ocean outfall management; water quality modeling. Field trip. Mr. Stenstrom (W)

284E. Saline Water Conversion. (Formerly numbered Engineering 284E.) Prerequisites: Engineering 137A and Chemistry 110A-110B or equivalent. Current research and development in saline water conversion, in the fields of distillation, electrodialysis, freezing, reverse osmosis and chemical extraction. A study of process optimization and economics of combined water power systems.
Mr. McCutchan, Mr. Stenstrom (W)

284F. Selected Topics in Water Resources (½ course) (Formerly numbered Engineering 284F.) Prerequisites: Graduate Standing; consent of instructor. Review of recent research and development in the management of 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 284G.) Prerequisites: one or more of the following courses recommended: Engineering 177A, Economics 1, 2, 100, 101A, 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 managment 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 284H.) Prerequisites: Engineering 129L, 184D. Development of mathematical models relating pollutant inputs to water quality. Scheduling of treatment plants capacity expansion. Regional water quality system models. Emphasis is on use of analytical and simulation techniques to manage water quality in streams, lakes, and estuaries. Mr. Stenstrom (Sp)

M288A. Urban Transportation Planning I. (Same as Architecture and Urban Planning M241A, formerly numbered Engineering M288A.) 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. O'Neill

M288B. Urban Transportation Planning II. (Same as Architecture and Urban Planning M241B, formerly numbered Engineering M288B.) Prerequisites: AUP 241A, 220A, or equivalent. 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. O'Neill

M288C. Urban Transportation Planning III. (Same as Architecture and Urban Planning M241C.) Prerequisites: AUP 241A-241B; 220A. 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. O'Neill

M296A. Biocybernetics I. (Formerly numbered Engineering M296A.) (Same as Medicine M296A.) Prerequisites: Engineering 171C or equivalent; M196B (may be taken concurrently). Development of modern systems/biocybernetic methods applicable to problems in life sciences and medicine. Emphasis on dynamical modeling, advanced analysis methods and their limitations, biological system quantification (identification), experimental design and hypothesis testing, the limitations of biological data, and computational methods. Mr. DiStefano (F)

M296B. Biocybernetics II. (Formerly numbered Engineering M296B.) (Same as Medicine M296B.) Prerequisite: Engineering Systems M296A. Physiology 100 or Biology 166 or equivalent is recommended. Continued development of modern systems/biocybernetics methodology and identification of biological systems. Critical survey of their application in the life sciences. The systems viewpoint of regulation in selected biological systems. Applications to human pathophysiology, diagnosis and therapy.
Mr. Di Stefano (W)

M296C. Seminar: Advanced Topics in Biocybernetics. (Formerly numbered Engineering M296C.) (Same as Medicine M296C.) Prerequisite: consent of instructor. Interactive seminar on current research topics in biocybernetics. Dynamic systems modeling of physiological processes, with emphasis on specific applications in physiology and clinical medicine. Students will be involved in one or more class projects. Mr. DiStefano (Sp)

Materials Science and Engineering

240A. Principles of Materials Science A (Microstructural Thermodynamics). Prerequisites: Engineering 105A or equivalent; Engineering 141 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. Knapp (F)

240B. Principles of Materials Science B (Structure of Materials). Prerequisite: Engineering 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. Wagner (W)

241. Oxidation of Metals. (Formerly numbered Engineering 241.) Prerequisite: Engineering 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 (F)

242A. Plasticity Theory Applied to Metal Working. (Formerly numbered Engineering 242A.) Prerequisite: 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 (Sp)

243A. Fracture of Structure Materials. (Formerly numbered Engineering 243A.) Prerequisite: 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: at least one of Engineering 143A, 156A, 158A, or equivalent courses. 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 (Sp, odd years)

243C. Dislocations and Strengthening Mechanisms in Solids. Prerequisites: Engineering 143A or 158A. Elastic and plastic behavior of crystals, the geometry, mechanics and interaction of dislocations, mechanisms of yielding, work hardening and other strengthening. Mr. Ono (F, even years)

244. Electron Microscopy. (Formerly numbered Engineering 244.) Prerequisite: Engineering 145A 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 (F, odd years)

245C. Diffraction Methods in Science of Materials. (Formerly numbered Engineering 245C.) Prerequisite: Engineering 145A or equivalent. Theory of the diffraction of waves (x-rays, electrons, and neutrons) in crystalline and non-crystalline 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 (F, even years)

246A. Mechanical Properties of Nonmetallic Crystalline Solids. (Formerly numbered Engineering 246A.) Prerequisite: Engineering 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, Mr. Sines (F, odd years)

246B. Structure and Properties of Glass. (Formerly numbered Engineering 246B.) Prerequisite: Engineering 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 (Sp, even years)

246D. Electronic and Optical Properties of Ceramics. (Formerly numbered Engineering 246D.) Prerequisite: Engineering 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. Mackenzie (Sp, odd years)

247A. Solid State Reactions. (Formerly numbered Engineering 247A.) Prerequisite: Engineering 142. 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)

247C. Advanced Solidification. (Formerly numbered Engineering 247C.) Prerequisite: Materials Science and Engineering 247A 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; student reports on current topics in solidification. Mr. Yue (F, even years)

248A. Experimental Methods in Materials Synthesis. (Formerly numbered Engineering 248A.) Prerequisite: a 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 carried out. Mr. Bunshah (W)

Mechanics and Structures

250A. Foundations of Fluid Dynamics. (Formerly numbered Engineering 250A.) Prerequisite: Engineering 150A or consent of instructor. The course develops and applies the fundamental theorems of fluid dynamics. Ideal fluids, potential flow, vortex motion, and viscous flow are treated. The history of fluid dynamics is illustrated with problems drawn from mechanics, aerodynamics, and geophysics. Mr. Kelly (F)

250B. Viscous and Turbulent Flows. (Formerly numbered Engineering 250B.) Prerequisite: Engineering 150A or consent of instructor. The course applies the fundamental principles of fluid dynamics to the study of fluid resistance. States of fluid motion are discussed in order of advancing Reynolds number; wakes, boundary layers, instability, transition, and turbulent shear flows. Mr. Meecham (W)

250C. Compressible Flows. (Formerly numbered Engineering 250C.) Prerequisite: Engineering 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. (Formerly numbered Engineering 251A.) Prerequisite: Engineering 150A or equivalent or consent of instructor. Fundamentals of fluid flows with density variations or rotation, illustrated by examples with environmental, geophysical or technical importance. Linear and finite amplitude wave motion. Flow past bodies; blocking phenomena. Viscous effects. Instabilities. Turbulent shear flows, wakes, plumes, and gravity currents.
Mr. Kelly (F, even years)

251B. Marine Hydrodynamics. (Formerly numbered Engineering 251B.) Prerequisite: Engineering 150A or equivalent; or consent of instructor; Engineering 193A-193B or equivalent. Basic hydrodynamics; small amplitude and shallow water theories; waves on beaches; ship waves; mathematical hydraulics; breaking of a dam.
Mr. Kelly (W, odd years)

251C. Fluid Dynamics of Pollution. (Formerly numbered Engineering 251C.) Prerequisite: Engineering 150A or consent of instructor. The course is designed to introduce to engineers and/or scientists of various disciplines the fluid mechanical aspect of pollution problems. The lectures will discuss in depth the fluid dynamics of photochemical smog, oil slicks and pollution in waterways. Mr. Liu (Sp, even years)

252A. Stability of Fluid Motion. (Formerly numbered Engineering 252A.) Prerequisite: Engineering 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, centifugal, and shear instabilities; boundary layer instability. Nonlinear aspects: sufficient criteria for stability, subcritical instabilities, supercritical states, transition to turbulence.
Mr. Kelly (W, odd years)

252B. Statistical Theory of Turbulence. (Formerly numbered Engineering 252B.) Prerequisite: Engineering 150A or consent of instructor. The course develops statistical methods of wide utility in engineering, then applies them to turbulent flows. Topics covered are stochastic processes, kinematics of turbulence, energy decay. Kolmogorov similarity, analytical theories, and origins of Reynolds stress.
Mr. Meecham (Sp, even years)

253A. Advanced Engineering Acoustics. (Formerly numbered Engineering 253A.) Advanced studies in Engineering Acoustics includes: three-dimensional wave propagation; propagation in bounded media; Ray acoustics; attenuation mechanisms in fluids.
Mr. Stern (F)

253B. Fundamentals of Aeroacoustics. (Formerly numbered Engineering 253B.) Prerequisite: Engineering 150A or consent of instructor. Detailed discussion of plane waves, point sources. Non-linearity, 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. (Formerly numbered Engineering 253C.) Prerequisite: Engineering 153A or 155A, or 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 (Sp)

254A. Special Topics in Aerodynamics. (Formerly numbered Engineering 254A.) Prerequisites: Engineering 150A-150B, 192A-192B-192C or equivalent or consent of instructor. Special topics of current interest in advanced aerodynamics. Examples are transonic flow, hypersonic flow, sonic booms, and unsteady aerodynamics.

255A. Advanced Dynamics. (Formerly numbered Engineering 255A.) Prerequisites: Engineering 155 and 169A, 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. (Formerly numbered Engineering 255B.) Prerequisite: Mechanics and Structures 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 (W)

256A. Mechanics of Deformable Solids. (Formerly numbered Engineering 256A.) Prerequisite: Engineering 158A or consent of instructor. Stress and strain tensors, indicial notation, compatibility conditions, equations of motion. Work and energy, uniqueness of solution and extremum principles. Constitutive laws of isotropic elastic solids, thermoelasticity, linear viscoelasticity and incremental plasticity. Mr. Mal (F)

256B. Elasticity. (Formerly numbered Engineering 256B.) Prerequisite: Mechanics and Structures 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)

256C. Plasticity, Creep and Thermal Stresses. (Formerly numbered Engineering 256C.) Prerequisite: Engineering 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. Lin (Sp)

256F. Analytical Fracture Mechanics. (Formerly numbered Engineering 256F.) Prerequisites: Materials Science and Engineering 243A; Engineering 156A, 158A or 166. Review of modern fracture mechanics, elementary stress analyses; analytical and numberical methods for calculation of crack tip stress intensity factors; engineering applications in stiffened structures, pressure vessels, plates and shells. Mr. Westmann (Sp, odd years)

M257A. Elastic Wave Propagation I. (Formerly numbered Engineering M257A.) (Same as Earth and Space Sciences M224A.) Prerequisite: Engineering 158A or 159A, or consent of instructor. Elastic wave equation and elementary solutions; wave motions in elastic half-spaces; reflection and refraction of elastic waves; surface waves; vibrations of rods and plates. Mr. Mal (W, even years)

M257B. Elastic Wave Propagation II. (Formerly numbered Engineering M257B.) (Same as Earth and Space Sciences M224B.) Prerequisite: consent of instructor. Wave propagation in layered media; Green's functions for various geometrics; diffraction and scattering of elastic waves; attenuation; inversion problems. Mr. Mal (Sp, even years)

259A. Seminar on Advanced Topics in Fluid Mechanics. (Formerly numbered Engineering 259A.) Prerequisite: consent of instructor. To study advanced topics in fluid mechanics with intensive student participation, involving assignments in research problems leading to a term paper or an oral presentation and possible help from guest lecturers. Mr. Charwat (W)

259B. Seminar on Advanced Topics in Solid Mechanics. (Formerly numbered Engineering 259B.) Prerequisite: consent of instructor. Advanced study in various fields of solid mechanics on topics which may vary from term to term. Topics cover dynamics, elasticity, plasticity and stability of solids. Mr. Muki (W)

262A. Advanced Mechanisms and Mechanical Systems. (Formerly numbered Engineering 262A.) Prerequisite: Engineering 162A. The kinematic analysis and synthesis of mechanisms and mechanical systems with special emphasis on use of modern analytical methods are considered. The use of computer techniques is discussed. A broad group of example systems are studied. Mr. Dubowsky (Sp, even years)

263A. Dynamics and Control of Machines and Electromechanical Systems. (Formerly numbered Engineering 263A.) Prerequisite: Engineering 163 or consent of instructor. The analysis of complex machines and electromechanical systems. Emphasis of the performance and dynamic response of systems containing gears; elastic compliances, active feedback elements, and other complex components and subsystems. Both classical methods and modern computer-based techniques are applied. Mr. Dubowsky (Sp, odd years)

263B. Vehicle Dynamics and Control. (Formerly numbered Enginering 263B.) Prerequisite: Engineering 163; Mechanics and Structures 255B recommended. Application to a variety of vehicles of advanced methods of dynamics and motion stability analysis, incorporating both classical and modern control theory. Particular emphasis is given to space vehicles and ground transportation vehicles, with special attention to current topics in these fields. Mr. Mingori (Sp, even years)

263C. Current Topics in Design, Dynamics and Control of Industrial Robots. Lecture, four hours. Prerequisite: Engineering 163 or equivalent. Theory and implementation of industrial robotic manipulator systems. The modeling of kinematic structure, trajectory planning and systems dynamics. Control concepts and control computer algorithms. Mechanical and electromechanical design considerations. Lectures and seminars on current literature. Individual student study projects. Mr. Dubowsky (W)

264A. Theory of Plates and Shells. (Formerly numbered Engineering 264A.) Prerequisite: Engineering 158A, 166, 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)

265A. Advanced Structural Analysis. (Formerly numbered Engineering 265A.) Prerequisite: Engineering 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 Engineering 265B.) Prerequisites: Engineering 166; Mechanics and Structures 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. Schmit (W)

265C. Nonlinear Structural Analysis. (Formerly numbered Engineering 265C.) Prerequisite: Mechanics and Structures 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)

266A. Stability of Structures I. (Formerly numbered Engineering 266A.) Prerequisite: Engineering 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. Dong (Sp)

267A. Optimum Structural Design. (Formerly numbered Engineering 267A.) Prerequisite: Mechanics and Structures 265A. Synthesis of structural systems; analysis and design as optimization problems; techniques for synthesis and optimization; application to aerospace and civil structures. Mr. Schmit (W)

267C. Advanced Reinforced Concrete Design. (Formerly numbered Engineering 267C.) Prerequisite: Engineering 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 Engineering 267E.) Prerequisites: Engineering 167A or 167B or 167C, and 169A which 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 Engineering 267S.) Prerequisite: Engineering 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. Mr. Rea (W)

268A. Experimental Structural Analysis. (Formerly numbered Engineering 268A.) Prerequisite: consent of instructor. Study of modern techniques in experimental mechanics, including dimensional analysis, measurement theory and measurement techniques. Emphasis will be placed on techniques of modern optics, e.g., holography. Moire analysis, photoelasticity and speckle interferometry. Mr. Fourney (Sp, odd years)

268B. Failure of Structural Systems. (Formerly numbered Engineering 268B.) Prerequisite: 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, even years)

269A. Dynamics of Structures. (Formerly numbered Engineering 269A.) Prerequisite: Engineering 169A. Principles of dynamics. Determination of normal modes and frequencies by differential and integral equation solutions. Transient and steady state response. Emphasis on derivation and solution of governing equations using matrix formulation.
Mr. Friedmann (F)

269B. Advanced Dynamics of Structures. (Formerly numbered Engineering 269B.) Prerequisites: Mechanics and Structures 265A, 269A. Analysis of linear and nonlinear response of structures to dynamic loadings. Stresses and deflections in structures. Structural damping and self-induced vibrations.
Mr. Friedmann (W)

269C. Introduction to Probabilistic Dynamics. (Formerly numbered Engineering 269C.) Prerequisite: Engineering 169A. 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)

269D. Aeroelastic Effects in Structures. (Formerly numbered Engineering 269D.) Prerequisite: Mechanics and Structures 269A. 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, odd years)

285A. Shear Strength of Soil and Stability of Slopes. (Formerly numbered Engineering 285A.) Prerequisite: Engineering 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 Engineering 285B.) Prerequisites: Engineering 185A; Mechanics and Structures 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. Lade (W)

285C. Soil Dynamics. (Formerly numbered Engineering 285C.) Prerequisites: Engineering 185A; Mechanics and Structures 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 Engineering 285D.) Prerequisites: Engineering 185A; Graduate Standing. The basic concepts of the theory of earth pressures behind retaining structures is presented with special application to the design of retaining walls, bulkheads and excavation bracing; the effects of flexibility of bulk bulkheads, creep in soils and construction techniques are also discussed in detail.
Mr. Lade (F, odd years)

285E. Seminar on Advanced Topics in Soil Mechanics. (Formerly numbered Engineering 285E.) Prerequisites: Graduate Standing in Engineering and consent of instructor. Topics may vary from term to term to cover subjects 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, Mr. Westmann (W)

285L. Advanced Soil Mechanics Laboratory. (Formerly numbered Engineering 285L.) Lecture, one hour; laboratory, six hours. Prerequisites: Engineering 185A, 185B; Mechanics and Structures 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 Engineering 286A.) Prerequisite: Mechanics and Structures 256A or 265A or 285A or Engineering 159A. 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. Seina (W)

286B. Structural Response to Ground Motions. (Formerly numbered Engineering 286B.) Prerequisite: Mechanics and Structures 269A 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. Mr. Rea (Sp)

M291A. Analytical Methods of Engineering I. (Formerly numbered Engineering 291A.) (Same as Systems Science M291A.) Prerequisites: Mathematics 131A and 132. Application of abstract mathematical methods to engineering problems. Review of elements of measure and integration, L2 theory — linear spaces and operators. Eigenvalue problems. Introduction to Spectral theory — elementary distribution theory. Applications to problems in engineering. Mr. Westmann (F,W)

M291B. Analytical Methods of Engineering II. (Formerly numbered Engineering 291B.) (Same as System Science M291B.) Prerequisite: Mechanics and Structures M291A or Systems Science 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. Westmann (W,Sp)

M292A. Asymptotic and Perturbation Methods I. (Formerly numbered Engineering M292A.) (Same as Mathematics M274A.) Prerequisites: Engineering 192A or equivalent; 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)

M292B. Asymptotic and Perturbation Methods II. (Formerly numbered Engineering M292B.) (Same as Mathematics M274B.) Prerequisites: Engineering 192A or equivalent; Mathematics 132 or equivalent. The fundamental mathematics of asymptotic analysis, limit process expansions, regular and singular perturbation problems, matching of asymptotic expansions, multiple scale methods, application to partial differential equations, near and far fields.
Mr. Muki (W)

System Science

200A. Linear Dynamic Systems. (Formerly numbered System Science 228A.) Prerequisite: Engineering 128A 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, Mr. Levan (F,W)

200C. Stochastic Processes. Prerequisite: Engineering 120B 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. Balakrishnan, Mr. Mortensen, Mr. Yao (F, Sp)

200D. Discrete Stochastic Processes. Prerequisite: Engineering 120A or equivalent or consent of instructor. Discrete stochastic process models in systems involving Poisson counting processes, renewal point processes, discrete time Markov chains, Markov jump processes; applications to communication systems and networks, queueing systems, information processing, control and operations research.
Mr. Miller, Mr. Rubin, Mr. Subelman (F,Sp)

201A-201ZZ. Seminars in System Science. Prerequisite: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of System Science. Lectures, discussions, student presentations and projects in areas of current interest. Some sections are intended for advanced students in a particular field and for students undertaking doctoral dissertations in the field. All sections are graded S/U only, and may be repeated for credit.
The Staff, System Science Department (F,W,Sp)

220A. Stochastic Theory of Queueing Systems I. (Formerly numbered Engineering 220A.) Prerequisite: Engineering M120C or consent of instructor. Stochastic Point Processes. Topics in the theory of queues; the Imbedded Markov Chain Method; equilibrium results for multiple server queues; method of stages; applications to communication, control, and system optimization, operations research.
Mr. Balakrishnan, Mr. Miller, Mr. Rubin (W)

220B. Stochastic Theory of Queueing Systems II. (Formerly numbered Engineering 220B.) Prerequisite: System Science 220A. Advanced topics in queueing theory and systems; transient behavior, virtual waiting time and busy period, integral equation method, series of queues and priority queues. Inventories, communication, control and systems problems.
Mr. Balakrishnan, Mr. Rubin, Mr. Subelman (Sp)

220G. Graphs and Network Flows. (Formerly numbered Engineering 220G.) Prerequisite: Engineering 129L recommended or consent of instructor. Solution to analysis and synthesis problems which may be formulated as flow problems in capacity constrained (or cost constrained) networks. Tools of network flow theory are developed using graph theoretic methods and are applied to communication, transportation and transmission problems.
Mr. Rubin. Mr. Subelman (F)

221. Linear Optimal Control. (Formerly numbered Engineering 221.) Prerequisites: Engineering 128A; Engineering 122A or equivalent (may be taken concurrently) 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, Mr. Mortensen (W,Sp)

222A. Nonlinear Control. (Formerly numbered Engineering 222A.) Prerequisite: System Science 221. Techniques for studying nonlinear control systems, with emphasis on their stability; Liapunov's direct method; input-output stability; Popov's method; linearization. Mr. Wang, Mr. Wiberg (F)

222B. Stochastic Control. (Formerly numbered Engineering 222B.) Prerequisites: Engineering 120B and System Science 221. Estimation and control of linear discrete-time and continuous-time stochastic systems; separation theorem and applications; Kalman filtering. Mr. Balakrishnan (F,Sp)

222C. Optimal Control. (Formerly numbered Engineering 222C.) Prerequisite: System Science 221. Applications of variational methods. Pontryagin's maximum principle, dynamic programming and nonlinear programming to problems of optimal control theory and practical systems.
Mr. Mortensen, Mr. P.K.C. Wang (W)

222EA-222EZ. Topics in Control. (Formerly numbered Engineering 222E.) Prerequisite: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of System Science. 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 when no duplication exists.
Mr. Balakrishnan, Mr. P.K.C. Wang (F,W)

M222F. Biological Control Systems. (Formerly numbered Engineering M222F.) (Same as Anesthesiology M222.) Prerequisite: Engineering 122A 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 (Sp)

M222G. Control and Coordination in Economics. (Formerly numbered Engineering M222G.) (Same as Economics M240.) Prerequisites: Graduate Standing in Economics or Engineering, consent of instructor. Appropriate mathematics course recommended. 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

227A. Signal Detection and Digital Communication. (Formerly numbered Engineering 227A.) Prerequisite: Engineering 120B or consent of instructor. Applications of statistical decision theory to signal detection in radar and communication; coherent and noncoherent detection of known signals in noise; detection of stochastic signals; binary and multiple-signal digital communication; sequential detection.
Mr. Omura, Mr. Yao (F,Sp)

227B. Information Theory and Coding. (Formerly numbered Engineering 227B.) Prerequisite: System Science 227A. Information theory and coding from the viewpoint of digital communication systems; digitial transmission and block coding; linear codes; convolutional codes, maximum likelihood decoding, and sequential decoding; ensemble error performance bounds of block and convolutional codes.
Mr. Omura, Mr. Rubin, Mr. Yao (W)

227C. Estimation and Filtering. (Formerly numbered Engineering 227C.) Prerequisite: Engineering 120B; System Science 227A recommended. Methods of determination of optimal statistical estimators, applied to problems in stochastic processes, communication systems, analog modulation and demodulation.
Mr. Balakrishnan, Mr. Mortensen, Mr. Yao (Sp)

227EA-227EZ. Topics in Communication. (Formerly numbered Engineering 227E.) Prerequisite: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of System Science. 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 when no duplication exists. Mr. Omura, Mr. Rubin, Mr. Yao (W,Sp)

227F. Algebraic Coding Theory. (Formerly numbered Engineering 227F.) Prerequisite: System Science 227B or consent of instructor. 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.
Mr. Omura, Mr. Yao (F)

227G. Rate Distortion Theory and Data Compression. (Formerly numbered Engineering 227G.) Prerequisite: System Science 227B or consent of instructor. Sources and distortion measures, rate distortion function and its evaluation for discrete and continuous sources, source coding theorems, block and tree source encoding techniques, and application to data compression. Student presentations of current research. Mr. Omura, Mr. Yao

229A. Numerical Techniques in Systems Optimization. (Formerly numbered Engineering 229A.) Prerequisites: Engineering 291A; Engineering 129A or System Science 272A or similar background recommended. Computational methods for constrained extrema of functionals. Mr. Balakrishnan, Mr. Karplus

229B. Functional Analysis and Optimization. (Formerly numbered Engineering 229B.) Prerequisites: Engineering 291A and consent of instructor. Functional analysis approach to optimization problems for dynamic systems — lumped and distributed. Emphasis on computational aspects.
Mr. Balakrishnan, Mr. Levan

229C. Stochastic Differential Systems. (Formerly numbered Engineering 229C.) Prerequisites: Engineering 120B, System Science M273B, Engineering 291A or equivalent, and consent of instructor. Integration with respect to continuous-parameter martingales; Radon-Nikodym derivatives in metric spaces; applications to filtering and stochastic control.
Mr. Balakrishnan, Mr. Mortensen

229EA-229EZ. Topics in Optimization. (Formerly numbered Engineering 229E.) Prerequisite: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of System Science. Comprehensive treatment of one or more selected topics in such areas as system optimization theory and numerical techniques, system identification, stochastic systems, finite graphs, network flows, queueing systems, etc. May be repeated for credit when no duplication exists.
Mr. Balakrishnan, Mr. Jacobsen (F,W)

229J-229K-229L. Public Systems Analysis. (Formerly numbered Engineering 229J-229K-229L.) Prerequisite: Graduate Standing or consent of instructor. Exploration of the relevance of system science methodologies to research activities directed toward improvements in the system that provide education, health care, transportation, communication, housing, environmental quality, and public safety services in urban areas. Mr. Jacobsen, Mr. Rubin

272A. Linear Programming. (Not the same as System Science 272A prior to Fall Quarter 1980.) 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, Mr. Subelman (F)

272B. Nonlinear Programming. (Formerly numbered System Science 272A.) Prerequisite; System Science 272A or equivalent. Basic graduate course in nonlinear programming. Convex sets and functions and their basic properties. Kuhn-Tucker saddle-point, and nonlinear or conjugate duality theory. Development of algorithms and convergence theory.
Mr. Jacobsen, Mr. Miller (W)

272BA-272BZ. Topics in Operations Research. Prerequisites: consent of instructor, and additional prerequisites for each offering as announced in advance by the Department of System Science. 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 when no duplication exists.
Mr. Jacobsen, Mr. Miller, Mr. Subelman (W,Sp)

272C. Optimization Methods for Large-Scale Systems. (Formerly numbered Engineering 272C.) Prerequisite: System Science 272B. 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 poly-hedra, reverse convex programming. Mr. Jacobsen (Sp)

273A. Dynamic Programming. (Formerly numbered Engineering 273A.) Prerequisites: Engineering 120A and 129L or equivalent. 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. Miller, Mr. Subelman (F, Sp)

273B. Probability Theory for Applications. (Formerly numbered System Science M273B.) Prerequisites: Engineering 120B, or 120C, and consent of instructor. This course is designed to prepare students for graduate courses in Communication, Control, and Operations Research. Measure and integration; conditioning; convergence; stochastic processes and measures on function spaces. The Wiener process, Poisson process, Markov processes, Markov times, and Martingales. Applications. Mr. Balakrishnan (W)

275A. Statistical Design of Engineering Experiments. (Formerly numbered Engineering Systems M275A.) Prerequisites: Engineering 193A, 193B. Matrix treatment of linear hypotheses in engineering experimentation. Statistical estimation, tests of hypotheses, analysis of variance, regression models. Randomized blocks, factorial, Latin square, multiple factor and level experiments. Principles of orthogonality, confounding, fractional replication, incomplete block designs with engineering applications. Mr. Balakrishnan, Mr. Subelman (Sp)

275B. Reliability Theory with Applications. (Formerly numbered Engineering 275B.) Prerequisite: Engineering 120A, 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. Miller, Mr. Subelman

M291A. Analytical Methods of Engineering I. (Formerly numbered Engineering 291A.) (Same as Mechanics and Structures M291A.) Prerequisites: Mathematics 131A and 132. Application of abstract mathematical methods to engineering problems. Review of elements of measure and integration, L2-theory — linear spaces and operators. Eigenvalue problems. Introduction to Spectral theory — elementary distribution theory. Applications to problems in engineering. Mr. Levan (F,W)

M291B. Analytical Methods of Engineering II. (Formerly numbered Engineering 291B.) (Same as Mechanics and Structures M291B.) Prerequisite: Mechanics and Structures M291A or System Science 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. Levan (W,Sp)

Interdisciplinary Courses

291C. Integral Equations in Engineering. Prerequisite: Mathematics 250B. Introduction to generalized function theory and Green's functions. Conversion of partial equations to integral equations and classification of integral equations. Solution to integral equations with degenerate kernels; discussions of successive approximations and Fredholm and Hilbert-Schmidt theory. Mr. Westmann (Sp)

298. Seminar in Engineering. (½ to 1 course) Prerequisites: Graduate Standing in engineering; consent of instructor. Seminars may be organized in advanced technical fields. Course may be repeated provided no duplication exists. If appropriate, field trips may be arranged.

***[16]470A-470D. The Engineer in the Technical Environment. (¾ course each)** Prerequisite: acceptance 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. Includes case studies and individual projects. Mr. O'Neill

***[16]471A-471B-471C. The Engineer in the General Environment. (¾, ¾, 1½ courses)** Prerequisite: acceptance 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. 471B-471C is offered on an In-Progress basis, which requires students to complete the full 2-quarter sequence, at the end of which time a grade is given for all quarters of work. Mr. Barthol

***[16]472A-472B-472C-472D. The Engineer in the Business Environment. (¾, ¾, ¾, 1½ courses)** Prerequisite: acceptance 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. 472A-472B-472C-472D are offered on an In-Progress basis, which requires two full two-quarter sequences; at the end of each sequence a grade will be given. Mr. Ruskin

***[16]473A-473B. Analysis and Synthesis of a Large-Scale System. (¾ course each)** Prerequisite: acceptance in the Engineering Executive Program. Credit to be given upon completion of 473B. 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. IP grading. Mr. Barthol, Mr. Ruskin

495. Teaching Assistant Training Seminar. Prerequisites: Graduate Standing in Engineering and 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 the students. To be graded on S/U basis only. Mr. Rubinstein (F)

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded on S/U basis.

596. Directed Individual or Tutorial Studies. (½ to 2 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. Supervised investigation of advanced technical problems. To be graded on a S/U basis.

597A. Preparation for M.S. Comprehensive Examination. (½ to 3 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. Reading and preparation for M.S. comprehensive examination. To be graded on a S/U basis.

597B. Preparation for Ph.D. Preliminary Examinations. (½ to 4 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. To be graded on a S/U basis.

597C. Preparation for Ph.D. Oral Qualifying Examination. (½ to 4 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. Preparation for Oral Qualifying Examination, including preliminary research on dissertation. To be graded on a S/U basis.

598. Research for and Preparation of the Master's Thesis. (½ to 3 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. To be graded on a S/U basis.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 4 courses) Prerequisites: Graduate Standing in engineering; consent of instructor. Usually taken after student has been advanced to candidacy. To be graded on a S/U basis.

English

(Office, 2225 Rolfe Hall)

Michael J.B. Allen, Ph.D., *Professor of English.*
Calvin Bernard Bedient, Ph.D., *Professor of English.*
Charles Ashton Berst, Ph.D., *Professor of English.*
Daniel G. Calder, Ph.D., *Professor of English (Vice-Chair of the Department).*
Richard Keith Cross, Ph.D., *Professor of English.*
Vinton A. Dearing, Ph.D., *Professor of English.*
Robert William Dent, Ph.D., *Professor of English (Vice-Chair of the Department).*
Patrick K. Ford, Ph.D., *Professor of English and of Celtic Studies.*
Robert A. Georges, Ph.D., *Professor of English.*
Gerald Jay Goldberg, Ph.D., *Professor of English.*
George Robert Guffey, Ph.D., *Professor of English.*
Charles Bennett Gullans, Ph.D., *Professor of English.*
Henry Ansgar Kelly, Ph.D., *Professor of English and of Medieval-Renaissance Studies.*
Jascha Kessler, Ph.D., *Professor of English.*
Robert Starr Kinsman, Ph.D., *Professor of English.*
Murray Krieger, Ph.D., *University Professor of English.*
Richard Alan Lanham, Ph.D., *Professor of English.*
Richard D. Lehan, Ph.D., *Professor of English.*
Blake Reynolds Nevius, Ph.D., *Professor of English.*
Maximillian Erwin Novak, D. Phil., Ph.D., *Professor of English.*
Joseph N. Riddel, Ph.D., *Professor of English.*
Florence Ridley, Ph.D., *Professor of English.*
Alan Henry Roper, Ph.D., *Professor of English.*
George S. Rousseau, Ph.D., *Professor of English and Eighteenth-Century Studies.*
William David Schaefer, Ph.D., *Professor of English.*
Paul Roland Sellin, Ph.D., *Professor of English.*
Paul Douglas Sheats, Ph.D., *Professor of English (Chair of the Department).*
Georg Bernhard Tennyson, Ph.D., *Professor of English.*
Peter Larsen Thorslev, Jr., *Professor of English.*
Alexander Welsh, Ph.D., *Professor of English.*
D.K. Wilgus, Ph.D., *Professor of English and Anglo-American Folksong.*
Ruth B. Yeazell, Ph.D., *Professor of English.*
Stephen Irwin Yenser, Ph.D., *Professor of English.*
Robert Martin Adams, Ph.D., *Emeritus Professor of English.*
Robert Paul Falk, Ph.D., *Emeritus Professor of English.*
John Jenkins Espey, B.Litt., M.A., (Oxon.), *Emeritus Professor of English.*
Charles V. Hartung, Ph.D., *Emeritus Professor of English.*
Leon Howard, Ph.D., L.H.D., *Emeritus Professor of English.*
Claude Jones, Ph.D., *Emeritus Professor of English.*
Paul Alfred Jorgensen, Ph.D., *Emeritus Professor of English.*
Alfred Edwin Longueil, Ph.D., *Emeritus Professor of English.*
Ada Blanche Nisbet, Ph.D., *Emeritus Professor of English.*
Franklin Prescott Rolfe, Ph.D., *Emeritus Professor of English.*
Walter Eldon Anderson, Ph.D., *Associate Professor of English.*
Charles Linwood Batten, Jr., Ph.D., *Associate Professor of English.*
A.R. Braunmuller, Ph.D., *Associate Professor of English.*
Frederick Lorrain Burwick, Ph.D., *Associate Professor of English.*
Edward Ignatius Condren, Ph.D., *Associate Professor of English and of Medieval Studies.*
Ronald E. Freeman, Ph.D., *Associate Professor of English.*
James Edward Goodwin, Ph.D., *Associate Professor of English.*
Christopher Waldo Grose, Ph.D., *Associate Professor of English.*
Albert David Hutter, Ph.D., *Associate Professor of English.*
Gordon L. Kipling, Ph.D., *Associate Professor of English.*
G. Jackson Kolb, II, Ph.D., *Associate Professor of English.*
Kenneth Robert Lincoln, Ph.D., *Associate Professor of English.*
Robert M. Maniquis, Ph.D., *Associate Professor of English.*
Raymund Arthur Paredes, Ph.D., *Associate Professor of English.*
Karen Elizabeth Rowe, Ph.D., *Associate Professor of English.*
Thomas Richard Wortham, Ph.D., *Associate Professor of English.*
Ruth E. Armentrout, Ph.D., *Assistant Professor of English.*
Susan D. Brienza, Ph.D., *Assistant Professor of English.*
Romey T. Keys, Ph.D., *Assistant Professor of English.*
Joseph F. Nagy, Ph.D., *Assistant Professor of English.*
Barbara Lee Packer, Ph.D., *Assistant Professor of English.*
Jonathan Post, Ph.D., *Assistant Professor of English.*
Jeffrey Rubin-Dorsky, Ph.D., *Assistant Professor of English.*
J. Fisher Solomon, Ph.D., *Assistant Professor of English.*
Seth Joshua Weiner, Ph.D., *Assistant Professor of English.*
Richard Alan Yarborough, Ph.D., *Assistant Professor of English.*

•

Jerome Cushman, A.B., B.S.L.S., *Senior Lecturer, Literature for Children and Adolescents.*
Everett L. Jones, M.A., *Senior Lecturer in English.*
David Stuart Rodes, Ph.D., *Senior Lecturer in English.*

English as a Second Language

(Office, 3303 Rolfe Hall)

J. Donald Bowen, Ph.D., *Professor of English.*
Russell Norman Campbell, Ph.D., *Professor of English.*
John Frederick Povey, Ph.D., *Professor of English.*

Clifford Holmes Prator, Ph.D., *Emeritus Professor of English.*
Marianne Celce-Murcia, Ph.D., *Associate Professor of English.*
Evelyn R. Hatch, Ph.D., *Associate Professor of English (Vice-Chair of the Department).*
Earl James Rand, Ph.D., *Associate Professor of English.*
Frances B. Hinofotis, Ph.D., *Assistant Professor of English.*
John H. Schumann, Ph.D., *Associate Professor of English.*
Roger W. Andersen, Ph.D., *Assistant Professor of English.*

•

Peter Ladefoged, Ph.D., *Professor of Phonetics.*

Advising. The general adviser for all graduate students is the Vice Chair for Graduate Studies (Department of English, 2225 Rolfe Hall). The Vice Chair, meets with all students upon entrance into the program and counsels them subsequently as need arises. In addition, he or she periodically evaluates their academic progress, considering among other things course grades, written evaluations of performance in readings courses and seminars, and progress toward the satisfaction of course and language requirements. Upon entrance, each student is also assigned a personal adviser, a faculty member who can offer informal advice when and if it is needed. Personal advisers may be changed at the request of either the students or the advisers themselves.

Disqualification and Appeal of Disqualification. Termination of graduate status may be recommended in cases of continued unsatisfactory scholarship, insufficient progress toward the degree, or failure of the M.A. Comprehensive Examination, and (in the case of Ph.D. students) the First or Second Qualifying Examinations. Such a recommendation is made by the Graduate Vice Chair, after consultation with the Graduate Committee, or (in the case of the Examinations) with the Comprehensive Examining Committee or the Graduate Staff. Appeals of such actions may be made by formal petition to the Graduate Committee.

The Master of Arts Degree

Admission Requirements. Admission to the master's program is based on a thorough review of the applicant's academic record. Ordinarily, students holding the B.A. are expected to meet these minimum requirements: an undergraduate major or program that prepares one for advanced study of literature; a grade point average in the junior and senior years of at least 3.2; and a score on the Graduate Record Examination of at least 600 on both the Verbal section of the Aptitude Test and the Advanced Literature in English Test. All applicants must submit a minimum of three letters of recommendation attesting to their ability to succeed in graduate study. For a descriptive brochure, prospective students may write the Graduate Secretary, Department of English, 2225 Rolfe Hall.

The master's program is not preliminary to the doctoral program and students seeking the Ph.D. should apply directly for that program. In a few cases, students who have done exceptionally well in the M.A. program have successfully petitioned the Graduate Committee for permission to enter the doctoral program.

Major Fields or Subdisciplines. The course requirements for the M.A. are highly flexible, in order to permit the student to plan a course of study that reflects his or her primary interests. Recommended electives for certain special fields of interest are suggested below.

Recommended Electives:

a. *Language:* English 120-123, 130, 190, 210-213, 240-242, 250K, 272, 274.

b. *Creative Writing:* English 133-135.

c. *English for Minority Groups:* English 109K, 114, 122, 123, 130, 190; Education 102; Linguistics 100, 170; Sociology 124, 155.

Foreign Language Requirement. Students may fulfill the language requirement by demonstrating a reading knowledge of any foreign language. This requirement should be satisfied at the beginning of the first quarter of residence, but in any event no later than the midpoint of the quarter in which all degree requirements are to be completed. A score of 500 or above on one of the Educational Testing Service (ETS) examinations is considered proof of a reading knowledge. Reading tests in languages not covered by an ETS examination are arranged by the English Department or by other language departments on campus.

Course Requirements. Nine (letter-graded) courses are required for the degree, five of which must be on the graduate level (200 or above). These nine courses must include one course in literary criticism (English 140A or 201) and three graduate courses in literary history (English 220-228; M243A-255; and, depending on specific content, 256-259), two of which must deal with periods before 1900, and two of which must be historically contiguous (for example, 224 and 225).

Teaching Experience. Teaching experience is not required for the degree, but students planning to enter community college teaching are advised to enroll in English 270A and 270B, which provide supervised teaching experience at cooperating community colleges. Since enrollment in these courses is by the instructor's consent, students are advised to consult the instructor early in the Fall Quarter of the year in which they plan to take the courses.

Comprehensive Examination Plan. Upon completion of all requirements, the student is given a Comprehensive Oral Examination of no more than 1½ hours, to test his or her comprehension of the major literary documents examined during graduate study and his or her ability to analyze a work of literature. For each student, an examining committee of three faculty members is appointed by the Vice Chair for Graduate Studies. The student writes a paper 10 pages in length on a subject set in consultation with the committee chair, and distributes it to the committee at least one week in advance of the examination. During the first half of the examination, the committee discusses the paper with the student. The remainder of the examination is devoted to the fields represented by the nine courses presented by the student for the degree. Comprehensive Examinations are offered during the Fall, Winter, and Spring Quarters of each academic year. (A student who fails the examination may be permitted to repeat the examination, but no student may repeat it more than once.)

Time to Degree. Students must normally conform to the following schedule in proceeding to the M.A. degree: (a) A maximum of 10 quarters from the time of entrance to taking the Comprehensive Examination, and (b) A maximum of 12 courses before taking the Comprehensive Examination. Students carrying an average load (two courses per quarter) can expect to complete the degree in five quarters (or four quarters and a summer session).

500 Series Course Limitations. Students in the master's program are permitted to take one independent study course (English 595: 4 units, letter grading) for credit toward the 9-course requirement. This course requires the completion of a substantial project, creative or scholarly.

The Ph.D. Degree

Admission Requirements. Admission to the doctoral program is based on a thorough review of the applicant's academic record. Ordinarily, applicants holding the B.A. and seeking direct admission to the Ph.D. program are expected to meet these minimum requirements: an undergraduate major or program that prepares one for advanced study of literature; a grade point average in the junior and senior years of at least 3.4; and a score on the Graduate Record Examination of above 600 on both the Verbal section of the Aptitude Test and the Advanced Literature in English Test. Applicants holding the M.A. will be expected to have a grade point average of at least 3.5 in their graduate studies, and correspondingly higher scores on the Advanced Test. All applicants must submit a minimum of three letters of recommendation attesting to their ability to succeed in graduate study. For a descriptive brochure, prospective students may write the Graduate Secretary, Department of English, 2225 Rolfe Hall.

Students limited on admission to the M.A. program may on completion of that course of study petition the Graduate Committee to enter the doctoral program, provided they have maintained a grade point average of at least 3.5 in their graduate studies, and are recommended by their examining committee. Such petitions are not automatically approved, and should be accompanied by appropriate supporting materials.

Foreign Language Requirement. Students 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 to the Departmental Graduate Committee. Such a request must be justified convincingly on the basis of a special research interest.

A reading knowledge of a language may be demonstrated in one of two ways: (1) by scoring 500 or higher on an Educational Testing Service (ETS) examination; (2) by passing a special reading examination offered by certain UCLA foreign language departments. The first language requirement must be satisfied before the student is admitted to the First Qualifying Examination, and the second before he or she is admitted to the Second Qualifying Examination.

A student who chooses the single language option must also demonstrate a reading knowledge of that language before taking the First Qualifying Examination. He or she may then proceed to demonstrate superior proficiency, before taking the Second Qualifying Examination, in either of two ways: (1) by successful completion (grade B or higher) of three upper division or graduate courses in the literature (not in translation) of the foreign language (such courses must be approved by the Vice Chair for Graduate Studies, must be in areas related to the student's specialization, and must not have been completed more than two years prior to the student's entrance into the Ph.D. program) or (2) by passing an examination administered by the Department of English. A student electing the latter option will be expected to demonstrate a knowledge of the foreign language (and literature) comparable to that which might be obtained by taking the three upper division or graduate courses.

Teaching Experience. Although teaching experience is not required, most students in the doctoral program have the opportunity to serve as teaching assistants after passing the English 275 requirement and being enrolled for at least one year in the doctoral program. Teaching assistantships are not automatically offered to doctoral students, but are awarded on the basis of merit.

Written and Oral Qualifying Examinations, Required Courses, and the Final Oral Examination. The doctoral program is divided into three stages, the first two of which culminate in the First and Second Qualifying Examinations.

A. *The First Stage.*

In the first stage, which leads to the master's degree, the student must take a minimum of nine (letter-graded) English courses from the 200 series. One course, 201, is required. (Students entering with an M.A. in English are presumed to have fulfilled the 9-course requirement, but must take 201 or its equivalents.)

First Qualifying Examination. Upon successful completion of these required courses (and satisfaction of at least one of the foreign language requirements), the student takes the First Qualifying Examination. This consists of four written examinations of four hours each. One of these may be taken in a genre (novel, drama, literary criticism, folklore/mythology, Afro-American literature, history of the language, rhetoric) or an alternate field (proposed by the student and approved by the Department's Graduate Committee). At least three of the examinations must be taken in any of the following chronological periods: the Middle Ages; the Renaissance; the Earlier 17th Century; the Restoration-18th Century; the Romantic Period; the Victorian Period; American Literature to 1828; American Literature 1828-1900; and *either* 20th Century American Literature *or* 20th Century British Literature. No student may write on more than two American fields, and those who elect a genre or alternate field may choose only one American field.

The four parts of the First Qualifying Examination are graded as High Pass, Pass, Low Pass, and Fail, and in order to pass the examination as a whole, a student must have maintained a passing grade on each of the parts. A decision on whether or not a student who fails is allowed to repeat must be made by the Graduate Faculty, which will consider, not only the results of the examining committees' evaluations but also the student's overall graduate record. (A grade of High Pass is considered final and need not be repeated. A grade of Low Pass on four examinations is considered a failure of the examination as a whole.) A student allowed to repeat must do so the next time the examination is offered. (A student who is allowed to repeat has the option of substituting a different field for one of his or her failures.) These examinations are offered twice a year, once in the fall and again in the spring.

Advising. After passing the First Qualifying Examination, each student chooses a faculty adviser in the area of his or her specialization, and remains with this adviser until the dissertation is completed.

Breadth Requirement. With the exception of course 201, no specific courses are required in this first stage of the program, but students must cover eight of the ten chronological fields before taking the Second Qualifying Examination. Students may elect to meet this requirement through any combination of exams chosen for the First Qualifying Examinations and courses. In at least two of the periods not chosen for the examinations students must select courses from the 220 series.

Philology Requirement. All students must take two courses in language from the sequence numbered 210-213 before the Second Qualifying Examination. Students with an interest in the fields of Anglo-Saxon or Medieval literature should take the introductory courses in this area (211 and 212) as early as possible.

Bibliography Requirement. English 200, Approaches to Literary Research, is required before taking the Second Qualifying Examination.

B. *The Second Stage.*

In this stage of the program, the student must take five courses from the 200 series in English, including a minimum of three seminars. The student is 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 deemed sufficiently well-prepared, through coursework and independent study, and after satisfying the second language requirement, the student takes the Second Qualifying Examination.

Second Qualifying Examination. The Second Qualifying Examination consists of an oral examination of no fewer than two hours (and probably more) in length, administered by a committee of five, including a chair and two other members from the English Department, and two members from outside the English Department. The examination consists of two parts. The first is an oral examination of at least one hour covering a 100-year period or longer in English or American literature. The second part of the oral examination deals with the student's prospectus. The committee must certify both that the candidate is competent in the historical field and that the prospectus has been approved. If one or both parts of the examination is failed the candidate may, at the discretion of the committee, repeat only once. The student submits a substantially researched dissertation prospectus, which has been approved by the committee chair, to each of the members of the committee at least one week before the scheduled examination. The student also offers, with the chair's approval, a list of at least ten significant scholarly or critical works that bear on the field of specialization and are directly relevant to the method or subject matter of the dissertation.

C. *The Third Stage.*

A student who has passed the Second Qualifying Examination may advance to candidacy, and upon his or her application, the Candidate in Philosophy (C.Phil.) degree is conferred. The student now proceeds with the writing of the dissertation. A final oral defense of the dissertation is optional with the doctoral committee, but is usually not required. Final approval of the dissertation is normally delegated to three certifying members of the doctoral committee (two from the English Department, and one from another department).

Time to Degree. A student will normally be able to complete his or her doctoral studies within 18 academic quarters, according each of the three stages of the program roughly equal amounts of time:

First Stage — from admission to the First Qualifying Examination, the time normally allowed is six quarters. (Students entering with the M.A. normally write the examination after three quarters in residence.)

Second Stage — from the First Qualifying Examination to the Second Qualifying Examination, the time normally allowed is six quarters.

Dissertation Stage — from the Second Qualifying Examination to the completion of the dissertation (and the degree), the time normally allowed is six quarters.

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. Gullans, Mr. Kipling

201. The History of Literary Criticism. Lecture, four hours. The study of the major documents in Western literary theory from Plato to the present.

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. Computer and Literary Research. Practice in writing and using computer programs for the analysis of literary style, content, and authorship. No previous knowledge in this area is necessary. Mr. Dearing

M205. Perspectives in American Folklore Research. (Same as Folklore and Mythology M205.) Prerequisites: Folklore 101 and one other upper-division folklore course. An examination of American folklore studies compared and contrasted with investigations in other countries, with emphases upon the principal conceptual schemes and research orientations employed in the study of folklore in American society. Mr. Jones, Mr. Georges, Mr. Wilgus

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. Armentrout, Mr. Condren

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. Ridley

213. Modern English. Detailed study of the language's history and characteristics since 1500. Phonological, grammatical and lexicographical developments will be studied in relation to accompanying intellectual, political and social changes.
Ms. Armentrout

215. The Structure of Present-day English. Prerequisite: course 122 or 122K. Investigation in depth of the basic constructs and sub-systems of English structure as described by grammarians of various theoretical persuasions. Ms. Celce-Murcia

216A-216B. Old Irish. Prerequisite: consent of instructor. Studies in grammar. Readings in the glosses and other texts. Comparative considerations.
Mr. Ford

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

Graduate Readings

These courses stress wide reading in major works and their cultural background. Students with adequate undergraduate preparation in a period may proceed directly to a seminar.

220. Readings in Medieval Literature.
Mr. Kelly, Ms. Ridley

221. Readings in the Renaissance Literature.
Mr. Jorgensen, Mr. Kinsman, Mr. Lanham

222. Readings in the Earlier Seventeenth Century Literature. Mr. Guffey, Mr. Gullans, Mr. Sellin

223. Readings in Restoration and Eighteenth Century Literature.
Mr. Dearing, Mr. Novak, Mr. Rousseau

224. Readings in Romantic Literature.
Mr. Burwick, Mr. Maniquis, Mr. Sheats

225. Readings in Victorian Literature.
Mr. Freeman, Mr. Tennyson, Mr. Welsh

226A. Readings in Earlier American Literature.
Mr. Weber

226B. Readings in Nineteenth-Century American Literature. Mr. Nevius, Ms. Packer

227. Readings in Twentieth-Century American Literature. Mr. Lehan, Mr. Riddel

228. Readings in Twentieth-Century British Literature. Mr. Bedient, Mr. Cross, Mr. Kessler

Graduate Seminars

Seminars are open to all graduate students with adequate preparation, and may be repeated for credit. Enrollment is by consent of instructor, and 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 by June 1 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). This course may be repeated, but may not satisfy more than one of the nine courses required for the First Qualifying Examinations, nor count toward any of the five courses required for the Second Qualifying Examination.

240. Studies in the History of the English Language. Individual seminars will deal 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. Armentrout, Mr. Calder

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.

242. Language and Literature. The application of linguistics to literary analysis. Individual seminars will deal with: a historical period, Medieval and Renaissance, Neo-classical, or nineteenth 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 to be set by the individual instructor. Mr. Calder, Mr. Kelly, Ms. Ridley

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 to be set by the individual instructor.
Mr. Allen, Mr. Dent, Mr. Kinsman

247. Shakespeare.
Mr. Dent, Mr. Jorgensen, Mr. Allen

248. Earlier Seventeenth-Century Literature. Studies in the poetry and prose of seventeenth-century English Literature up to the Restoration; limits of investigation to be set by the individual instructor.
Mr. Guffey, Mr. Gullans, Mr. Sellin

249. Milton. Studies in the poetry and prose of John Milton; particular emphases to be set by the individual instructor. Mr. Grose, Mr. Sellin, Mr. Post

250. Restoration and Eighteenth-Century Literature. Studies in English poetry and prose, 1660-1800; limits of investigation to be set by the 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 to be set by the individual instructor.
Mr. Freeman, Mr. Tennyson, Mr. Kolb

253. Contemporary British Literature.
Mr. Bedient, Mr. Kessler, Mr. Yenser

254. American Literature to 1900. Studies in colonial and nineteenth-century American Literature; limits of investigation to be set by the individual instructor. Mr. Nevius, Mr. Wortham

255. Contemporary American Literature. Studies in contemporary American poetry and prose; limits to be set by the 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 to be set by the individual instructor.
Mr. Berst, Mr. Dent

257. Studies in Poetry. Studies in various themes and forms of poetry from Old English to the present; limits of investigation to be set by the individual instructor. Mr. Bedient, Mr. Kessler, Mr. Riddel

258. Studies in the Novel. Studies in the evolution of the genre from its beginnings to the present; limits of investigation to be set by the individual instructor.
Mr. Lehan, Mr. Novak, Mr. Welsh

259. Studies in Criticism.
Mr. Hutter, Mr. Krieger, 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 to be set by the individual instructor. Mr. Guffey, Mr. Lincoln, Mr. Rousseau

Special Courses

270A-270B. English for the Two-Year College. Prerequisite: course 120B or 275. The courses will involve both discussion and practice of two-year college instruction in reading and composition. They are offered on an "In-Progress" basis which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for both quarters of work. Ms. Fujii

271. Studies in African Literature in English. Prerequisite: English 114 or consent of instructor. Continuation of English 114. Special problems and trends of African literature in English. Mr. Povey

272. Current Issues in the Teaching of English. Prerequisite: course 120B or Linguistics 100. The course will focus each time on one of a variety of topics of special current interest. Mr. Lanham

M273. Studies in Afro-American Literature. (Same as Afro-American Studies M200E.) Prerequisite: consent of instructor. Intensive research and study of major themes, issues, and writers in Afro-American Literature. Discussions and research on the esthetic, cultural, and social backgrounds of Afro-American writing. Mr. Yarborough, Mr. Keys

274. Teaching English to Minority Groups. Pre- or co-requisite: course 120 or Linguistics 100. The special cultural, social, psychological, and methodological considerations involved in the English instruction of minority groups in American schools and colleges.

Professional Courses in Method

275. Stylistics and the Teaching of English. An introduction to the study of language and style and its application to the teaching of English, including rhetoric, linguistics, and grammar. Required of all applicants for the Teaching Assistantship in English. To be graded S/U. Ms. Brienza

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.

495. Supervised Teacher Preparation. Prerequisite: teaching assistant, involved in freshman composition program. Seminar for teaching assistants who are associated with the freshman composition program. Required for first quarter assistants. May be repeated for credit. To be graded S/U. Ms. Venis

496. Directed Individual Study in Pedagogy. (½ course) Prerequisite: must be teaching assistant working under member of the faculty. Supervised individual instruction in teaching, including monitoring of teaching assistant's pedagogical activities and regular consultation with assistant concerning all of his teaching responsibilities. To be graded S/U.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean; and approval of host campus Instructor, Department Chair, and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

595. Directed Individual Study for Master's Candidates. An independent study course for Master's Candidates, which involves the completion of a substantial piece of work, creative or scholarly. Four units will be accepted toward the nine courses required for the degree. Offered only on a graded basis.

596. Directed Individual Study. For first-stage doctoral students preparing for the first Qualifying Examination. May be taken only once (four units). May not be used to satisfy any course requirement for the degree. To be graded S/U.

597. Preparation for the Doctoral Examination. Ph.D. Candidates restricted to one course (four units) before the Second Qualifying Examination. To be graded S/U.

599. Dissertation Research. (1 or 2 courses) Enrollment restricted to Ph.D. Candidates unable to enroll in seminars in their fields, or candidates concurrently enrolled in such seminars. (Exception to this rule must be requested by petition). To be graded S/U.

English as a Second Language

Certificate Program and the Master of Arts Degree in Teaching English as a Second Language

Admission Requirements. To be admitted to the Certificate or the M.A. program, U.S. citizens and students from other countries must have the equivalent of an American bachelor's degree or an educational background sufficient to qualify them as teachers in their country.

The Certificate program includes nine courses, which can be normally completed within the 9-month period of an academic year. Since several of the courses are given only once a year and must be taken in fixed order, students are only admitted at the beginning of the Fall Quarter.

In order to complete the Certificate or M.A. program, candidates so admitted must maintain a grade point average of at least B.

Prior teaching experience is not required for admission. The Admissions Committee in the TESL section screens all applications using the following criteria: grade point average, letters of recommendation, applicant's statement of purpose and relevant professional experience. Since admission is limited to the number of students admitted each year, it is important that the student submit a complete application containing all of this material.

Applications for admission are obtained from and returned to the Graduate Admissions Office. The TESL program does *not have* a separate departmental application. The TESL program requires three letters of recommendation in support of the application for admission. Three letters of recommendation forms are included in the admission packet. The applicant is requested to submit the letters of recommendation and the statement of purpose directly to the Graduate Adviser, English as a Second Language, Department of English. The statement of purpose should contain the following information: (1) reasons candidate wishes to study TESL at UCLA; (2) special qualifications and experience as a teacher and (3) knowledge of languages other than English.

The Graduate Record Examination (GRE) is not required as part of the admission requirements. Personal interviews are not required, but welcomed.

Advising. Edie Olson, Graduate Adviser; Teaching English as a Second Language Program; 3306 Rolfe Hall, 405 Hilgard Ave., Los Angeles, California 90024.

New students entering the program meet with the Graduate Adviser and the staff at a special orientation meeting held at the beginning of the Fall Quarter. There is a clearly stated set of course requirements students must fulfill in order to earn the TESL Certificate. Each individual student's program is specified in a meeting with the Graduate Adviser. During the year, students are made aware of their progress in individual courses as the result of midterm and final examinations. At the beginning of each quarter, the Graduate Adviser reviews each student's record and advises him or her of progress in the program and the remaining requirements that must be met.

Foreign Language Requirement. Students whose native language is English generally use their Fall and Winter Quarter electives to fulfill a special requirement intended to help them 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 corresponding course in the Linguistics 220 (Linguistic Areas) or 225 (Linguistic Structures) series; (3) one foreign language course plus English 274 (Teaching English to Minority Groups) (4) English 111K (Background Language for Teachers of English as a Second Language) plus an unrestrictive elective.

Those particularly interested in working with Mexican-American, Oriental-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 the linguistic structure of that language should be selected whenever possible.

The electives to be taken during the Fall and Winter Quarters vary, depending on whether or not the student speaks English as his or her native language. Non-native speakers of English, depending on the results of the University's Entrance Examination in English as a Second Language, may be required to take a course designed to improve their practical command of English.

Students are urged to fulfill the language requirement by courses taken after admission to the Certificate program. Exemption from the courses may be granted, however, to those who can demonstrate a strong need to take other electives and who have an unusually extensive background of previous foreign language study. Information regarding the circumstances under which a petition for exemption may be approved can be obtained from the TESL Graduate Adviser.

Course Requirements. The typical course of study for both the Certificate program and the first year of the M.A. program is as follows:

Fall Quarter: Linguistics 100, English 370K, Foreign Language Requirement or Elective. (Course depends on language requirement plan.)

Winter Quarter: English 122K, English 250K, Foreign Language Requirement or Elective. (Course depends on language requirement plan.)

Spring Quarter: Linguistics 103 or English 103K; English 380K; English 106K, or Engish 107K, or English 109K.

Exceptions to the above requirements will be made only after consultation with the Graduate Adviser.

Of the nine courses required for the Certificate, *at least* seven of the courses must be in TESL, English, Linguistics, or structure of language courses in language departments.

Work completed in regular undergraduate status *cannot be counted* as fulfillment of the Certificate or M.A. program requirements.

Teaching Experience. All students are required to teach ESL at one of four levels under the supervision of a master teacher: in one of the UCLA ESL service courses; in an adult school; in a secondary school; or in an elementary school. In addition to supervision and observation by the master teacher of the host schools, a UCLA TESL faculty member observes each TESL student several times during each course.

The Certificate in Teaching English as a Second Language leads to a credential to teach on the Adult School level only.

Time to Completion of Certificate. Normally, students finish the Certificate requirements within the 9-month academic year, however, some students due to financial and/or outside commitments are allowed to complete the program on a part-time basis.

Disqualification. Students are required to maintain a 3.0 (B average) throughout their academic career. Should the student fall below the minimum grade point average, he/she is notified by the Associate Dean of the Graduate Division and the Graduate Adviser. After consultation with the student, Graduate Adviser, and the Vice Chair, a memo is normally sent to the Graduate Dean requesting that the student be allowed to continue on probation allowing the student to remove any deficiencies during the next quarter in residence.

Disqualification of a student will be requested of the Dean of the Graduate Division by the Vice Chair on the recommendation of a departmental committee set up to review the particular circumstances of a given case. The committee will include at least one student. Either the Graduate Adviser or a member of the faculty may initiate the process by informing the Vice Chair of the need to consider a given student for disqualification.

In general, TESL policy follows that of the overall University policy in that a student can be disqualified for: (a) failing to complete degree requirements during the period permitted by departmental regulations; (b) failing to maintain the required GPA; (c) lapses in expected academic morality, e.g., plagiarism, cheating.

Appeals. If a student thus disqualified has grounds for appealing the decision, the student will present them in writing to the Vice Chair, who will then reconvene the ad hoc committee to reconsider the matter.

Should a student complete the Certificate program minus the required 3.0 grade point average, a meeting must be arranged with the Vice Chair and the Graduate Adviser to determine what extra courses the student should take to remove the deficiency.

Other Relevant Information and Rationale of Program. There are two technical courses in Linguistics. Linguistics 100 is an introduction to the methods and concepts of linguistics analysis; the nature of language, the interlocking systems that make up a language, how a language is analyzed. Examples are drawn from a large number of the world's languages. English 122K applies these same methods and concepts to the study of the phonological and grammatical structures of modern English.

There are three professional courses which deal primarily with pedagogical matters. English 370K develops a methodology based on what is known of the nature of language and the nature of the learner, and deals with general guidelines applicable to learners of any background or at any level of instruction. English 250K, which is conducted as a series of seminar projects, provides an opportunity to contrast first languages and cultures with English and to apply this knowledge to the construction of materials suited to the particular needs of ESL students. These courses include the observation of filmed classes at various levels and visits to language classrooms and laboratories, in preparation for English 380K, in which the student-trainees engage in classroom teaching under the supervision of a master teacher at the university, elementary, secondary, or adult level.

Each student is required to take two practical courses. One is chosen from three courses that consider the written language in ESL instruction (either composition (English 106K), reading (English 107K), or literature (English 109K)) and the other with spoken language (phonetics, either English 103K or Linguistics 103). English 106K, English 107K, and English 109K provide opportunities to upgrade composition skills and study an important related area, the teaching of composition, reading or literature in the ESL context. English 103K is designed to help non-native speakers improve their own pronunciation and to give native speakers the experience of helping to improve the pronunciation of others. Linguistics 103 emphasizes practical training in analyzing and describing speech.

The elective courses can serve a variety of purposes. They permit students especially concerned with the language problems of underprivileged children in the American schools to include in their program a 2 or 3-course sequence in teaching English to a particular minority group. They make it possible for native speakers of English to become acquainted with a new language, judge the validity of pedagogical theory in the light of a fresh language-learning experience, and gain better insights into the linguistic and cultural backgrounds of those whom they are eventually to instruct. In some cases a non-native speaker of English can take a course in the structure of his/her native language — something about which he/she may have very little analytical knowledge. Some students use their electives to broaden their acquaintance with American or English literature. Others use them to fulfill the prerequisites for admission to a related M.A. program in another department.

As explained above, the course of study includes a substantial practical element: the observation of classes, the preparation of lesson plans, and actual classroom teaching. *Prospective students should be forewarned, however, that there is an equal or greater emphasis on theory in the program, especially at the beginning of the Certificate year. 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 their competence in a language. They are also expected to be able to relate theoretical guidelines to practical procedures. This program is therefore probably not appropriate for the student who is interested exclusively in receiving vocational training.*

The Master of Arts Degree in Teaching English as a Second Language

Major Fields or Subdisciplines. The M.A. in TESL is designed to provide students with an opportunity to investigate, in depth, some particular aspect of teaching and learning English as a second language or dialect. Whereas the major emphasis of the Certificate program is on improving the teacher's performance in the classroom, the M.A. program is particularly relevant to the out-of-class responsibilities that a specialist in TESL is often asked to assume, such as research, planning, curriculum development, the formulation of policy, and the preparation of instructional materials.

Foreign Language Requirement. There are no foreign language requirements for the M.A. in TESL other than those included among the Certificate requirements.

Course Requirements. For any master's degree, the University requires satisfactory completion of at least nine graduate (in the 200 or 500 series) and upper division (in the 100 series) courses, including at least four graduate courses taken during the Certificate year that are credited toward the fulfillment of this requirement: usually Linguistics 100, Linguistics 103 or English 103K, English 122K, and English 250K. This leaves five courses, four of which must be at the graduate level, to be completed during the M.A. year. The combination of the Certificate plus the M.A. thus requires 14 courses.

The electives to be taken should be selected as a sequence of three courses related among themselves and relevant to the thesis topic chosen. These courses should be selected in consultation with the M.A. Adviser at the beginning of the student's work toward the M.A., and any subsequent changes of program must have the M.A. Adviser's approval.

English 400K is a seminar in which TESL M.A. candidates present and defend the results of their thesis research. Enrollment is required of all candidates in the Spring Quarter but does not count for credit toward the degree.

Teaching Experience. One quarter of supervised teaching is required during the Certificate year.

Thesis Plan. At the conclusion 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.

Time to Degree. From Graduate Admission to completion of TESL Certificate: three quarters. From Graduate Admission to award of M.A. degree: six quarters, and in some cases, a summer session. Students must complete the degree including the filing of the thesis within three years after beginning the M.A. program. If the degree is not completed within that time period, students must file a petition indicating reasons for extension of time with the Department.

500 Series Course Limitations. Students in the M.A. program are permitted to take 8 units of 500 series courses. Students must be enrolled in English 598K (Research and Thesis Preparation for Candidates for M.A. in Teaching English as a Second Language) each quarter they are registered; however, a total of only 4 units of credit is given on a Satisfactory/Unsatisfactory basis. In addition, students are permitted to take up to 4 units of English 596K (Individual Study and Research) or 500 series courses, on a letter grade basis, in other departments if relevant to the student's thesis preparation.

Lower Division Courses

A grade of C or better is required to pass into the next class in the series, or proficiency demonstrated on the English as a Second Language Placement Examination.

33A. Low Intermediate English as a Second Language. Prerequisites: grade of C or better in X832, or proficiency demonstrated on the English as a Second Language Placement Examination. Meets ten hours weekly. Intensive instruction in the structure of English, with a focus on vocabulary building, reading and listening skills, and basic composition techniques.

33B. Intermediate English as a Second Language. Prerequisites: grade of C or better in English 33A, or proficiency demonstrated on the English as a Second Language Placement Examination. Meets five hours weekly. Emphasizes writing and reading comprehension skills. Additional work on grammar review, vocabulary development, listening and speaking.

33C. High Intermediate English as a Second Language. Prerequisites: grade of C or better on English 33B, or proficiency demonstrated on the English as a Second Language Placement Examination. Meets five hours weekly. Emphasizes composition research skills and reading unsimplified academic materials.

34. Oral Communication Skills for Foreign Students. Prerequisite: grade of C or better in English 33C, or proficiency demonstrated on the English as a Second Language Placement Examination. English 34 will develop oral language skills that will prepare non-native speakers of English to participate in class discussions, make oral presentations (lectures, debates, thesis defense, etc.) before an audience and respond to questions, and continue to improve through self-evaluation of speech. Ms. Hinofotis

36. Intermediate Composition for Foreign Students. Prerequisite: grade of C or better in English 33C, or proficiency demonstrated on the English as a Second Language Placement Examination. A course designed to improve English language writing skills for non-native speakers of English. Special attention is given to grammatical structures, principles and methods of exposition and writing for academic purposes.

Upper Division Courses

103J. Phonetics for Foreign Students. Prerequisite: grade of C or better in English 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. Language laboratory.

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. Bowen

106J. Advanced Composition for Foreign Students. Prerequisite: grade of C or better in English 33C, or proficiency demonstrated on the English as a Second Language Placement Examination. Exercises in writing based on readings dealing with American life and thought, with the aim of developing control of idiomatic expression.

106K. Writing in the ESL Context. Limited to TESL Certificate or M.A. Candidates. Provides opportunities for practice and improvement in writing skills and thus fulfills the composition requirement for the TESL Certificate. Surveys important theoretical and methodological issues related to the teaching of writing/composition to ESL students and examines appropriate classroom materials. Mr. Schumann

107K. Reading in the ESL Context. Limited to TESL Certificate or M.A. Candidates. Provides opportunities for practice and improvement in writing skills and thus fulfills the composition requirement for the TESL Certificate. Surveys important theoretical and methodological issues related to the teaching of reading to ESL students and examines appropriate classroom materials. Ms. Hatch

109J. Introduction to Literature (for Foreign Students). Prerequisite: grade of C or better in English 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 mastery of the English language. Mr. Povey

109K. Literature in the ESL Context. Limited to TESL Certificate or M.A. Candidates. Provides opportunities for practice and improvement in writing skills and thus fulfills the composition requirement for the TESL Certificate. Surveys important theoretical and methodological issues related to the teaching of literature to ESL students and examines appropriate classroom materials. Strongly emphasizes the cultural basis for literature. Mr. Povey

111K. Background Language for Teachers of English as a Second Language. Prerequisite: consent of instructor. Fulfills the foreign-language requirement for the Certificate in the Teaching of English as a Second Language. Beginning course in a non-Indo-European language taught as a demonstration of recommended pedagogical techniques and designed to acquaint prospective language teachers with a wide variety of linguistic structures. Mr. Anderson

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

Additional Required Courses for Certificate Program

Linguistics 100. Introduction to Linguistics. An introduction to the theory and methods of linguistics: universal properties of human language; phonetic, phonological, morphological, syntacic, and semantic structures and analysis; the nature and form of grammar.

Linguistics 103. Introduction to General Phonetics. Prerequisite: course 100 or equivalent (100 may be taken concurrently with 103). 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. A special section emphasizes those languages likely to be of interest to teachers of English as a Second Language.

Graduate Courses

210K. Role of English as a Second Language in Bilingual Education. Prerequisites: Linguistics 100, course 370K or consent of instructor. Research and study of major problems and issues in designing and evaluating bilingual, bi-cultural programs in the United States and abroad. Mr. Galvan

250K. Contrastive Analysis and Error Analysis in the ESL Context. Prerequisites: Linguistics 100, course 370K. Analysis of English and other languages at the phonological, grammatical, lexical, and cultural levels. Preparation of lesson plans for helping specific groups of students overcome common errors identified through the analyses. Observation of ESL classes. Mr. Anderson, Mr. Campbell, Mr. Galvan

251K. Bilingual Comparative Studies. Seminar. Prerequisite: courses 215 and 250K. The relationship of two languages in an incipient bilingual speaker. Further study of the techniques of contrastive analysis as a means of predicting interference between linguistic systems with application to original research projects. Mr. Bowen

260K. Psycholinguistics and Language Teaching. Seminar. Prerequisites: courses 370K and 103K 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; basic experimental designs to test existing assumptions about learning and teaching foreign languages. Ms. Hatch, Mr. Schumann

261K. Language Testing for Teachers of English as a Second Language. Prerequisites: Linguistics 100, course 370K. Theory of testing language competence and performance. Elementary statistical concepts. Functions of a testing program. Construction of various tests. Ms. Hinofotis

262K. Second-Language Acquisition. Prerequisite: consent of instructor. The literature on child and adult second-language acquisition forms the basis for this research class. Language variables (phonological, morphological, sentential, and discourse levels) and social and psychological variables which may account for differences in learning are considered. Research on classroom language learning and/or learning in 'natural' environments is required. Mr. Schumann

263K. Issues in Language Testing. Lecture, four hours. Prerequisite: course 261K or consent of instructor. This course is 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. The latest approaches to language testing methodology will be examined. Specific topics will vary according to trends in the field. Ms. Hinofotis

264K. English for Specific Purposes. Study of methodologies for needs analysis, curriculum development and testing for specific academic, professional, and vocational groups who require Engish as a foreign or second language.

270K. Language Policy in Developing Countries. Seminar. 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 socio- and psycholinguistics to problems of language policy. Mr. Prator

272K. Current Issues in Applied Linguistics. Prerequisites: or Co-requisites: Linguistics 100, English 370K. Each time it is given the course will focus on one of a variety of topics of special interest to graduate students in TESL and Applied Linguistics.

Professional Courses

370K. The Teaching of English as a Second Language. Meets six hours weekly. 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.

Ms. Hatch, Ms. Celce-Murcia, Mr. Schumann

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. Graded on a S/U basis for graduate students, and a Passed/Not Passed basis for undergraduate students.

400K. TESL Colloquium. Prerequisite: consent of TESL M.A. advisor. Candidates for the M.A. in Teaching English as a Second Language present and defend the results of their thesis research. Enrollment in course in spring quarter required of all candidates but does not count for credit toward degree. Candidates for the Ph.D. in Applied Linguistics may also choose to use this channel to report on their dissertation. Graded S/U.

495KA-495KB. Training and Supervision of Teaching Assistants. Prerequisite: concurrent appointment as a teaching assistant or Extension-Division instructor. Orientation, preparation, and supervision of graduate students who have the responsibility for teaching ESL courses at UCLA. Syllabus revision and materials preparation. Two or more hours per week for fall and winter quarters. Credit for a total of four units for the two quarters is given but does not count toward M.A. or Certificate in TESL or Ph.D. in Applied Linguistics. Graded S/U.

Individual Study and Research

596K. Directed Individual Study. Prerequisite: Graduate Standing. Credit (one course) allowed only once. Independent study in an area related to English as a Second Language.

598K. Research and Thesis Preparation for Candidates for M.A. in Teaching English as a Second Language. (1 to 2 courses) Prerequisite: admission to M.A. program. Survey of research needs and thesis preparation. In fall includes optional section on experimental design and statistical methods. Credit (four units) toward degree allowed only once, but all M.A. candidates must enroll in the course each quarter they are registered and engaged in thesis preparation. Graded S/U. Mr. Rand

Environmental Science and Engineering (Interdepartmental)

(Office: 3677 Geology Building)

Orson L. Anderson, Ph.D., *Professor of Geophysics.*
James G. Edinger, Ph.D., *Professor of Meteorology.*
Ernest A. Engelbert, M.P.A., Ph.D., *Professor of Political Science.*
Christopher S. Foote, Ph.D., *Professor of Chemistry.*
Malcolm S. Gordon, Ph.D., *Professor of Biology.*
Chung-Yen Liu, Ph.D., *Professor of Engineering and Applied Science.*
Robert A. Mah, Ph.D., *Professor of Public Health.*
Clemens A. Nelson, Ph.D., *Professor of Geology.*
Richard L. Perrine, Ph.D., *Professor of Engineering and Applied Science (Chair of the Interdepartmental Committee).*
Morton G. Wurtele, Ph.D., *Professor of Atmospheric Dynamics.*
Climis A. Davos, Ph.D., *Associate Professor of Public Health.*
Mohammad G. Mustafa, Ph.D., *Associate Professor of Public Health and Medicine.*
Michael K. Stenstrom, Ph.D., *Associate Professor of Engineering and Applied Science.*
Jane Valentine, Ph.D., *Associate Professor of Public Health.*
Jeffrey I. Zink, Ph.D., *Associate Professor of Chemistry.*
William Dritschilo, Ph.D., *Adjunct Assistant Professor of Environmental Science and Engineering.*
Leona M. Libby, Ph.D., *Adjunct Professor of Environmental Science and Engineering.*
Robert G. Lindberg, Ph.D., *Lecturer in Environmental Science and Engineering.*
Paul M. Merifield, Ph.D., *Lecturer in Engineering and Environmental Geology.*
Bart B. Sokolow, D. Env., *Adjunct Assistant Professor of Environmental Science and Engineering.*

The Doctor Of Environmental Science and Engineering (D.Env.)

Admission Requirements. In addition to meeting University minimum standards, candidates must have an excellent scholastic record and must be acceptable to the Environmental Science and Engineering Interdepartmental Committee. They must hold a bachelor's and master's degree in engineering, public health, or one of the natural sciences to be formally admitted to the program. 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. As such, they are entitled to faculty guidance in course scheduling preparatory to the program and are encouraged to participate in the colloquia.

Address where prospective students may write for departmental brochures: Environmental Science and Engineering, UCLA, 3677 Geology, Los Angeles, Calif. 90024.

Three letters of recommendation are required.

The Environmental Science and Engineering program offers fellowships to first year students, if eligible. Applications are obtained from the Environmental Science and Engineering office.

Students are admitted to the doctoral program after completion of a master's degree in one of the natural sciences, engineering, or public health with a superior record. There is no master's program in Environmental Science and Engineering.

Advising. Graduate Adviser — Environmental Science and Engineering, 3677 Geology Building.

Graduate students are advised in general terms by the program Graduate Adviser, but their specific program is planned in consultation with a program committee of three faculty members. This program committee is formed during the student's first quarter in the program. The student meets with this committee at least once a year, and frequently more often, to plan his/her program. This committee consists of at least two members of the Interdepartmental Committee, and at least one member from the student's major discipline. The program committee later serves as the nucleus for the student's doctoral committee.

Ongoing evaluations of academic progress are made by a careful review at the end of each quarter of progress in courses completed toward degree requirements, grades in all coursework, performance in the cumulative exams, and performance in Problems Coursework. The primary assessment is by course faculty and the Graduate Adviser, with review and assistance as needed by the student's guidance committee.

Major Fields or Subdisciplines. Students may pursue one of several specialties within the Environmental Science and Engineering program; these include, but one is not limited to, air quality, water resources, geological and solid earth problems including resource conservation, problems associated with energy production, and the biological impact of man's activities. Also, it is possible for the student to slant his/her work either in the direction of greater emphasis on the science and engineering side, or on the science policy side of an area of emphasis.

Course Program.

Course Requirements. A minimum of nine courses after admission to the program will be required to broaden the student's education in environmental problem areas, to deepen his/her knowledge in his/her speciality, to bridge gaps between other courses selected, and to provide a sufficient background in related social science subjects. More than nine courses are usually required, unless students are outstandingly well-prepared. Students will be guided in the selection of this course program by their program committee. Courses taken outside the student's own disciplinary area will often be upper division undergraduate courses. Lower division courses may also be required but cannot be counted toward the minimum 9-course requirement. Individual reading or study courses may be taken under the guidance of a qualified faculty member.

Breadth Requirements. Students must pass a program of required breadth courses, in four of the five areas described below, excluding their special area. Courses taken during undergraduate or master's work may count toward this requirement with approval of the Interdepartmental Committee. This approval may be delegated to the Graduate Adviser. Upper division or graduate courses taken in this program will count toward the nine required courses. All breadth courses must be taken for a letter grade.

Courses may be substituted with the approval of both the student's committee and the Interdepartmental Committee. This approval may be delegated to the Graduate Adviser. In gen-

eral, courses to be substituted must fall within the same general area.

Departmental curricula and course numbers are so frequently altered that a specific designation of required breadth courses can be misleading, but the following general description of requirements may be useful.

Biology: Five courses, including environmental biology, microbiology, and public health.

Chemistry: Five courses, including organic and environmental chemistry.

Earth Sciences: Four courses, including both geology and meteorology.

Engineering and Mathematics: Seven courses, including calculus (one full year) energy and environmental engineering, and statistics.

Social Sciences: Five approved courses from Architecture and Urban Planning, Economics, Law, Management, and Political Science.

Environmental Science and Engineering Seminar: ESE 411 is required of all students each quarter, taken S/U.

During the breadth program, full-time students will normally enroll in 18 units, including the Seminar ESE 411.

The Problems Course. When the breadth requirements are near completion, students will enroll for three successive quarters in the Environmental Courses (ESE 400 ABC), at 8 units per quarter.

Environmental Workshops. Students may also take several Environmental Workshops concurrent with the environmental problems course as their committee and the faculty member in charge of the problems course may require.

Written and Oral Qualifying Examinations.

Cumulative Examinations. Students must pass four out of eight 2-hour cumulative examinations, which are offered four times a year. These examinations are designed to test awareness of the current literature of Environmental Science and Engineering. Students must begin them in their first quarter in the program. They must attempt each examination offered after they begin, or it is counted as a fail. Thus, they have a maximum of two years to complete the requirement.

Qualifying Oral Examination. When the student has completed all other course requirements and is in the final quarter of the Problems Course, a doctoral committee will be established. The Interdepartmental Committee will nominate a minimum of three faculty members from a list of "inside" members supplied to the Graduate Division (normally those who already constitute the student's guidance committee) and a minimum of two "outside" members whose names do not appear on the list. The doctoral committee will be appointed by the Dean of the Graduate Division acting for the Graduate Council.

The doctoral committee conducts an Oral Qualifying Examination of the student. The committee uses the student's contribution to the report of the Problems Course as a starting point from which to assess the student's competence to engage in applied research. The doctoral committee takes note of the particular areas of interest to the student as evidenced by his/her professed discipline and coursework, and conducts the examination in such a way as to explore both the depth, breadth, and extent of the student's preparation with appropriate emphasis on practical problems and situations. Upon successful completion of the oral examination and completion of their Problems Course requirements, students are advanced to candidacy.

If the student should fail this examination, he/she will be permitted to take it on one subsequent occasion after completion of such additional coursework or individual study as the doctoral committee may recommend.

Doctoral Committee. There are no additional conditions to those stated by the Graduate Council.

Final Report and Oral Examination. A dissertation is not required. However, upon his/her return to UCLA following the internship, the student participates for a final quarter in the Problems Course and prepares a complete written report on his/her internship program. This report must be a detailed and complete statement of the problem on which he/she worked, must indicate clearly what his/her contribution was, and must contain an evaluation of the present status of the problem. Written reports done at the institution may be accepted as part of all of this requirement if they have been prepared by the student and are of the quality required by the doctoral commitee and if the student's contribution is clearly identified.

The written report must demonstrate to committee members that the candidates have effectively applied to the study, program, or project of their internship the knowledge, concepts, and principles acquired during their academic preparation. If the report is satisfactory as judged by his/her committee, the student gives one or more seminars in an Environmental Colloquium. If the seminar and all other elements of the student's performance are judged satisfactory by his/her committee, the student is awarded the degree of Doctor of Environmental Science and Engineering (D.Env.).

The final written report submitted by the student in partial satisfaction of these requirements will be filed in the University Library as a permanent record. A copy is also to be filed with the Environmental Science and Engineering Program Office and with the chair of the doctoral committee.

Currently, the Final Oral Examination is routinely required in this program. The examination may be held before the candidate has prepared the final report, but passing the examination does not imply approval of the final report. If a final oral examination is required, all members of the committee must attend and vote. Students may pass with one negative vote. Notification is sent to the Graduate Division on the "Result of the Final Oral Examination" form. In case of failure, the doctoral committee will determine whether or not the candidates may be reexamined.

Time to Degree. Full-time students are expected to take 14 or 18 units per quarter. The average time for completion of all coursework following admission is six to eight quarters. The minimum period for the internship is 18 months, followed by a final quarter by UCLA. The normal period from admission to award of the degree is therefore, 13 to 15 quarters.

Disqualification and Appeal of Disqualification. The process by which a student may be recommended for termination will depend on the status of a graduate student. For a student who has not yet taken the oral examination for advancement to the internship, the basic decision that termination of graduate status is appropriate will be made by a majority of five faculty: the 3-member committee responsible for the student's program up to internship, and the Program Graduate Adviser and Chair. After the oral examination has been administered and passed, responsibility shifts to the 5-member doctoral committee. Should an appeal be made, it is to the Program's Interdepartmental Committee. Grounds for termination, aside from unacceptably low course grades, may include, unsatisfactorily slow progress toward completion of degree requirements, inability to communicate as required for success in the program area (written or oral), or that an individual simply is not suited for the kind of professional activity which is the goal of this educational program.

Other Relevant Information. An 18 to 24-month internship is required of all students, with faculty approval and overview responsibility. When a student has been advanced to candidacy, an internship in the student's field of interest will be arranged at an outside institution. Arrangements for the internship are the responsibility of the student, and must be approved by both the doctoral committee, the Interdepartmental Committee, and the Dean of the Graduate Division. The arrangements are to be formalized by a written memorandum of understanding between the Chair of the Interdepartmental Committee and an appropriate representative of the internship institution. Supervision during the one and 1½ to 2-year period of the field training experience will be by the student's doctoral committee.

Graduate Courses

400A. Environmental Science and Engineering Problems Course. (2 courses) Prerequisites: consent of instructor and program chair; primarily intended for students enrolled in the Environmental Science and Engineering doctoral program. Multidisciplinary technical and socio-economic analysis and prognosis of significant current environmental problems.

400B. Environmental Science and Engineering Problems Course. (2 courses) Prerequisite: satisfactory completion of 400A, consent of instructor and program chair. Continuation of 400A. Multidisciplinary technical and socio-economic analysis and prognosis of significant current environmental problems. In-Progress grading.

400C. Environmental Science and Engineering Problems Course. (2 courses) Prerequisites: satisfactory completion of 400B; consent of instructor and program chair. Continuation of 400B. Multidisciplinary technical and socio-economic analysis and prognosis of significant current environmental problems. Letter grade assigned upon completion of 400C.

400D. Environmental Science and Engineering Problems Course. (2 courses) Prerequisites: satisfactory completion of 400C and of an internship approved by the Environmental Science and Engineering Interdepartmental Committee. Multidisciplinary technical and socio-economic analysis and prognosis of significant current environmental problems.

410. Environmental Science and Engineering Workshop. (½ course) 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. (½ course) Prerequisite: consent of instructor and limited to graduate students in Environmental Science and Engineering and participating departments. Current topics in environmental science and engineering. To be given on a S/U basis. May be repeated more than once for credit.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser, Program Chair, and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual or Tutorial Studies. (½ to 2 courses) Prerequisites: consent of instructor and the Chair, Environmental Science and Engineering Interdepartmental Committee. Supervised investigation of advanced environmental problems. To be graded S/U basis.

Folklore and Mythology (Interdepartmental)

(Office, 1041 Graduate School of Management)

Shirley L. Arora, Ph.D., *Professor of Spanish.*
Margherita Cottino-Jones, Ph.D., *Professor of Italian.*
Patrick K. Ford, Ph.D., *Associate Professor of English and Celtic Studies. (Director, Center for the Study of Comparative Folklore and Mythology.)*
Robert A. Georges, Ph.D., *Professor of English and Folklore.*
Marija Gimbutas, Ph.D., *Professor of European Archaeology.*
Nazir A. Jairazbhoy, Ph.D., *Professor of Music.*
Michael Owen Jones, Ph.D., *Professor of History and Folklore.*
Vladimir Markov, Ph.D., *Professor of Slavic Languages.*
James Porter, M.A., *Professor of Music and Folklore.*
Jaan Puhvel, Ph.D., *Professor of Classics and Indo-European Studies.*
Stanley L. Robe, Ph.D., *Professor of Spanish.*
Robert M. Stevenson, Ph.D., *Professor of Music.*
Donald J. Ward, Ph.D., *Professor of German and Folklore.*
D. K. Wilgus, Ph.D., *Professor of English and Anglo-American Folksong (Chair, Folklore and Mythology Committee).*
Johannes Wilbert, Ph.D., *Professor of Anthropology.*
Wayland D. Hand, Ph.D., *Emeritus Professor of German and Folklore.*
Charles Speroni, Ph.D., *Emeritus Professor of Italian.*
David E. Draper, Ph.D., *Assistant Professor of Music.*
Joseph Nagy, Ph.D., *Assistant Professor of English and Folklore.*

•

Marianna D. Birnbaum, Ph.D., *Adjunct Associate Professor in Hungarian.*
Inkeri Rank, M.A., M.Ed., *Lecturer in Finnish Studies.*

•

Alexander Badawy, Ph.D., *Professor of Art.*
Henrik Birnbaum, Ph.D., *Professor of Slavic Languages.*
Kees W. Bolle, Ph.D., *Professor of History.*
Kenneth G. Chapman, Ph.D., *Professor of Scandinavian Languages.*
Jerome Cushman, B.S.L.S., *Senior Lecturer in Literature for Children and Adolescents.*
Elsie Dunin, M.A., *Associate Professor of Dance.*
Charlotte Heth, Ph.D., *Assistant Professor of Music.*
Melvyn Helstien, Ph.D., *Professor of Theater Arts.*
Boris A. Kremenliev, Ph.D., *Emeritus Professor of Music.*
Steven Lattimore, Ph.D., *Associate Professor of Classics and Classical Archaeology.*
Jacques Maquet, Ph.D., *Professor of Anthropology.*
James R. Massengale, Ph.D., *Associate Professor of Scandinavian Languages.*
Michael Moerman, Ph.D., *Professor of Anthropology.*
Philip Newman, Ph.D., *Associate Professor of Anthropology.*
Wendell H. Oswalt, Ph.D., *Professor of Anthropology.*
Pier-Maria Pasinetti, Ph.D., *Professor of Italian and Comparative Literature.*
Douglas Price-Williams, Ph.D., *Professor of Anthropology and Psychiatry in Residence.*
Florence H. Ridley, Ph.D., *Professor of English.*
Arnold Rubin, Ph.D., *Associate Professor of Art.*
Georges Sabagh, Ph.D., *Professor of Sociology.*
Allegra Snyder, M.A., *Professor of Dance.*
Eli Sobel, Ph.D., *Professor of German.*
Erik Wahlgren, Ph.D., *Emeritus Professor of Scandinavian and Germanic Languages.*
Dean S. Worth, Ph.D., *Professor of Slavic Languages.*

The programs leading to the M.A. and Ph.D. degrees in Folklore and Mythology are administered by the Interdepartmental Committee on Folklore and Mythology.

The Master of Arts Degree

Admission Requirements. The student is required to have completed Folklore 101, Introduction to Folklore (or its equivalent), and another upper division course in folklore. (These course requirements may be completed during the first quarter in residence at UCLA, following admission to the program.) In addition, two letters of recommendation from former instructors or other comparable references are required.

Applicants who have completed Folklore 101 are admitted in any term; others are admitted only in the Fall and Spring terms.

Advising. Address: Folklore and Mythology Program, 1041 Graduate School of Management.

Students will plan their programs with the guidance and approval of the Chair.

Foreign Language Requirement. A reading knowledge of French, German, or Spanish is required. Students will have the option of demonstrating proficiency either by:

(a) presenting evidence of passing the fifth quarter or fourth semester level course in the chosen foreign language at a college or university with a grade of B or its equivalent no more than five years before graduate enrollment, or

(b) successfully completing the Educational Testing Service GSFLT examination with a score of 500 or better, or

(c) passing a reading examination administered and evaluated by members of the Folklore and Mythology Program faculty (or by "outside" faculty in the case of languages not familiar to the Folklore and Mythology faculty). The "in-house" foreign language examination will consist of two parts: (1) translation into English of a portion of traditional prose or poetic text, with the student choosing which of two to translate, and (2) translation into English of a passage from an historical or theoretical work in folklore and mythology studies. Each part of the examination will be 50 minutes in length, with the student allowed the use of a dictionary during the final 15 minutes. The examination will be devised, administered, and evaluated by a 2-member committee appointed by the Chair of the Folklore and Mythology Interdepartmental Committee.

No student may enroll in Folklore 597A, Preparation for M.A. Comprehensive Examination, until the foreign language requirement is satisfied.

Course Requirements. All degree candidates, whether electing the Thesis or the Comprehensive Examination Plan (see below), must complete the following courses: Folklore 200, Folklore Bibliography, Theory and Research Methods; Folklore 201A-201B, Folklore Collecting and Field Research; Folklore 216, The Folktale, and at least one course each from the following groups:

Group 1. One course in folksong 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.

Thesis Plan. The candidate must complete a minimum of 10 courses (six in the 200 series—which may include only one 596 course) and submit an acceptable thesis, prepared under the direction of a member of the Folklore and Mythology Program. Submission of the thesis will be followed by an oral examination covering the fields of folklore and mythology studies.

The thesis committee, composed of three or more faculty members chosen with the approval of the Chair of the Interdepartmental Committee on Folklore and Mythology, is appointed no later than the quarter before the student expects to complete the requirements. No "outside" members are required.

Comprehensive Examination Plan. The candidate must complete a minimum of 10 courses (six in the 200 series — which may include only one 596 course). After completion of the coursework, the candidate will be expected to demonstrate competence in a written examination requiring a grasp of:

— theoretical bases, major documents, and research methods and techniques of folklore and mythology studies.

— two forms of folklore and mythology.

— the folklore and mythology of a specific country, continent, or geographical area.

A final Oral Comprehensive Examination will cover the fields of folklore and mythology studies.

The Comprehensive Examinations are given no later than the seventh week of each quarter. The written examinations are set by (1) a 3-person faculty committee appointed by the Chair of the Interdepartmental Committee on Folklore and Mythology, and (2) by the members of each candidate's M.A. committee, three or more faculty members chosen with the approval of the Chair of the Interdepartmental Committee on Folklore and Mythology. No "outside" members are required.

Time to Degree. For a full-time student with no deficiencies upon admission to the program, the normal progress toward the degree is as follows:

a. From graduate admission to completion of required courses: five to six quarters.

b. From graduate admission to award of degree: seven quarters.

500 Series Course Limitation.

Course No.	Unit Value	Type of Grading
596	2-6	Letter
597A	2-4	S/U
597B	4-8	S/U
598	2-4	Letter
599	4-8	S/U

Only four units of 596 and no other 500 series courses may be applied to the minimum course requirements.

Disqualification. The specific conditions which may lead to termination are: (1) failure to pass the foreign language examination in or before the fifth quarter in residence (2) scholarship (recommendation from the Interdepartmental Committee on Folklore and Mythology); (3) failure to make normal progress toward the degree (recommendation from the Interdepartmental Committee on Folklore and Mythology); (4) failure to pass the Comprehensive Examination (recommendation from the student's master's committee).

Appeals. The student is notified of termination by the Chair of the Interdepartmental Committee on Folklore and Mythology in writing. Should the student wish to appeal such a decision, he/she may submit a letter to the Chair stating his/her reasons, and the Chair will transmit it to the Committee for consideration. (A student who fails the Comprehensive Examination may apply to retake the examination within one year.)

The Ph.D. Degree

Admission Requirements. Requirements for admission to the doctoral program include the completion of the requirements for the M.A. degree in Folklore and Mythology (or their equivalents) including the Comprehensive Examination. A student will be admitted to the doctoral program upon the recommendation of the Folklore and Mythology Interdepartmental Committee. (A student may secure provisional admission in order to complete the admission requirements.)

Major Fields. A student is required to develop a competency in (1) a major field of folklore and mythology and (2) an area of concentration within a related discipline. These areas will be selected with the approval of the student's guidance committee.

Foreign Language Requirement. A reading knowledge of German and another language approved by the candidate's guidance committee is required. Students will have the option of demonstrating proficiency either by:

(a) presenting evidence of passing the fifth quarter or fourth semester level courses in the chosen foreign language at a college or university with a grade of B or its equivalent no more than five years before graduate enrollment, or

(b) successfully completing the Educational Testing Service GSFLT examination with a score of 500 or better, or

(c) passing a reading examination administered and evaluated by members of the Folklore and Mythology Program faculty (or by "outside" faculty in the case of languages not familiar to the Folkore and Mythology faculty). The "in-house" foreign language examination will consist of two parts: (1) translation into English of a portion of a traditional prose or poetic text, with the student choosing which of two to translate, and (2) translation into English of a passage from an historical or theoretical work in folklore and mythology studies. Each part of the examination will be 50 minutes in length, with the student allowed the use of a dictionary during the final 15 minutes. The examination will be devised, administered, and evaluated by a 2-member committee appointed by the Chair of the Folklore and Mythology Interdepartmental Committee.

The foreign language examinations must be completed before the student attempts the Qualifying Examination.

Course Requirements. Before attempting the Qualifying Examination, a student will complete a minimum of nine courses or seminars in the 200-series (or substitutes recommended by his/her guidance committee) in (1) a major field of folklore and mythology and (2) an area of concentration within a related discipline.

Qualifying Examination. After the required preparation, the student will complete a written examination covering (1) his/her specialization in folklore and mythology and (2) his/her related area of concentration. The examinations will be administered by a committee appointed with the approval of the Folklore and Mythology Interdepartmental Committee and will include one or more members from the student's related discipline.

Doctoral Committee. The student's doctoral committee will consist of a minimum of three faculty members actively participating in the Folklore and Mythology Program and a minimum of two "outside" members, at least one of whom is from the student's related discipline. The doctoral committee will consider and approve the student's dissertation topic.

Final Oral Examination Following Completion of the Dissertation. A successful oral defense of the dissertation will constitute the final examination for the degree.

Time to Degree. For a full-time student with no deficiencies upon admission to the program (pre-M.A.) the normal progress to degree is 18 quarters. The normal progress from the M.A. to the Ph.D. is 11 quarters.

Disqualification and Appeal of Disqualification. The specific conditions which may lead to termination are: (1) failure to complete the foreign language requirements; (2) scholarship (recommendation from the Interdepartmental Committee on Folklore and Mythology); (3) failure to make normal progress to the degree (recommendation from the Interdepartmental Committee on Folklore and Mythology); (4) failure to meet the requirements of the doctoral committee. After notification of termination in writing, a student may appeal to the Interdepartmental Committee on Folklore and Mythology.

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. Wilgus

201B. Folklore Collecting and Field Research. Prerequisite: course 201A. The supervised completion of a fieldwork project developed in Folklore 201A.
Mr. Jones, Mr. Wilgus

202A-202B. Folklore Archiving. (½ course each) Prerequisite: course 200. One quarter of lecture-demonstration in the principles and techniques of the classification and preservation of folklore collectanea, followed by one quarter of directed experience in archiving.
Mr. Georges

M205. Perspectives in American Folklore Research. (Same as English M205.) Prerequisites: Folklore 101 and one other upper-division folklore course. An examination of American folklore studies compared and contrasted with investigation in other countries, with emphasis upon the principal conceptual schemes and research orientations employed in the study of folklore in American society. Mr. Jones

213. Folk Belief and Custom. Prerequisites: course 101 and any one of the following courses: 118, M121, M122, M123A-M123B, 124, M125, M126, M128, M149, M150; Anthropology 102, 140; German 134, 240. A study of beliefs and customs in the folk community: the life cycle, calendrical and agricultural customs, and legal antiquities. Mr. Jones, Mr. Ward

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. Prerequisites: course 101, M106, or M111; also recommended: Anthropology M146, 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

M219. Seminar in the Puppet Theater. (Same as Theater Arts M217.) Prerequisite: consent of instructor. Studies in the puppet theaters of the world: techniques, literature, aesthetics. Mr. Helstien

M230A-M230B. Folk Tradition in Italian Literature. (Same as Italian M230A-M230B.)

240. Introduction to Jewish Folk-Literature. (Same as Near Eastern Languages-Jewish Studies M240). Prerequisite: Graduate Standing or upper division with consent of instructor. An examination of both the historic and generic methods used in the study of Jewish Folk-Literature.

M241. Folklore and Mythology of the Near East. (Same as Near Eastern Languages M241.)

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 and methods and techniques employed in the study of and analysis of traditional tales, songs, music, linguistic expression.

M249. Hispanic Folk Literature. (Same as Spanish and Portuguese M249.) Prerequisite: Graduate Standing. An intensive study of folk literature as represented in a) ballad and poetry; b) narrative and drama; c) speech. Ms. Arora, Mr. Robe

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 M252.) Prerequisite: Anthropology 105A 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 peoples. Mr. Wilbert

M258. Seminar in Folk Music. (Same as Music M258.) Prerequisite: consent of instructor. Mr. Porter, Mr. Wilgus

259. Seminar in Folklore. Prerequisite: course 200 and consent of instructor.

M286A-M286B-M286C. Studies in Hispanic Folk Literature.

M286A. Studies in Hispanic Folk Literature — The Romancero. (Same as Spanish M286A.) Meets two hours weekly.

M286B. Studies in Hispanic Folk Literature — Narrative and Drama. (Same as Spanish M286B.) Meets two hours weekly. Ms. Arora, Mr. Robe

M286C. Studies in Hispanic Folk Literature — Ballad, Poetry, and Speech. (Same as Spanish M286C.) Meets two hours weekly. Mr. Robe

400A-400B-400C. Directed Professional Activities. Prerequisite: permission of department chairman. Directed individual projects in professional editing, bibliography, discography, filmography, festival direction, and other professional activities. May be repeated for credit. May not be used to satisy course requirements for the M.A. degree.

495A-495B. The Teaching of Folklore and Mythology. Prerequisite: course 200. Analysis and design of alternative organizational schemes, teaching aids and techniques, and evaluation methods for folklore and mythologies at college level, with opportunities for observation and apprentice teaching. Offered on an In-Progress basis. Credit only on completion of 495B. May not be used to fulfill any of the course requirements for the M.A. degree. Mr. Georges

501. Cooperative Program. (½ to 2 courses) Approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596. Directed Studies in Folklore. (½ to 1½ courses)

597A. Preparation for M.A. Comprehensive Examinations. (½ to 1 course) (Formerly numbered 597.) Prerequisites: graduate status in Folklore and Mythology; consent of instructor. Graded S/U.

597B. Preparation for Ph.D. Qualifying Examinations. (1 to 2 courses) Prerequisite: successful completion of the M.A. Comprehensive Examination; consent of instructor. Graded S/U.

598. Master's Thesis Preparation. (½ to 1 course)

599. Dissertation Research. (1 to 2 courses) Prerequisite: advancement to doctoral candidacy. Graded S/U.

Related Courses in Other Departments

Graduate Courses

Anthropology 230P. Ethnology.

232Q. Myth and Ritual.

233Q. Aesthetic Anthropology.

M237B-M237C. Ethnographic Film Direction.

M247A. Seminar in Ethnographic Film.

264. Ethnography of the Mexican/Chicano People in North America.

271. African Cultures.

272. Indians of South America.

273. Cultures of the Middle East.

274. Cultures of the Pacific Islands.

Art 219. Topics in Native North American Art.

220. The Arts of Africa, Oceania and Pre-Columbian America.

Classics 268. Seminar in Comparative Mythology.

Comparative Literature CM229. Archetypal Heroes in Literature.

Dance 226A-226E. Dance Expressions in Selected Cultures.

English 220. Readings in Medievalism.

French 215A-215D. The Medieval Language and Literature.

German 240A. Theories, Methods and History of Germanic Folklore.

240B. Folksong and Ballad.

240C. Oral Prose Genres.

M245A. Germanic and Scandanavian Mythology.

245B. Germanic Antiquities.

262. Seminar in Germanic Folklore.

Italian 214E. *The Decameron.*

217B. Commedia dell'arte and the Theatre.

218C. The Theater, Especially Metastasio, Goldoni, C. Gozzi.

Music 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.

283. Music of Thailand.

285. Music of Tibet.

287. Seminar in African Music.

288. Seminar in North American Indian Music.

Russian 251A-251B. Old Russian Literature.

291A. Seminar in Old Russian Literature.

Spanish 262B. Epic Poetry.

French

(Office, 160 Haines Hall)

Marc Bensimon, Ph.D., *Professor of French.*
Eric Gans, Ph.D., *Professor of French (Chair of the Department).*
Hassan el Nouty, Docteur ès Lettres, *Professor of French.*
Oreste F. Pucciani, Ph.D., *Professor of French.*
Francis J. Crowley, Ph.D., *Emeritus Professor of French.*
Milan S. La Du, Ph.D., *Emeritus Professor of French.*
Oreste F. Pucciani, Ph.D., *Emeritus Professor of French.*
Stephen D. Werner, Ph.D., *Associate Professor of French.*
Mary-Ann Burke, Ph.D., *Assistant Professor of French.*
Patrick Coleman, Ph.D., *Assistant Professor of French.*
Shuhsi Kao, Ph.D., *Assistant Professor of French.*
Sara Melzer, Ph.D., *Assistant Professor of French.*
James Reid, Ph.D., *Assistant Professor of French.*

•

Colette Brichant, Docteur de l'Universite de Paris, *Lecturer in French.*
Jacqueline Hamel-Baccash, Licenciée-ès-Lettres, *Lecturer in French.*
Madeleine Korol-Ward, Ph.D., *Lecturer in French.*
Padoue de Martini, B.A., *Lecturer in French.*

General

For the purposes of all graduate programs in the Department, the corpus of French literature is divided into three chronological periods: I Medieval-Renaissance; II Classical (roughly the 17th and 18th centuries); III Modern (since 1800) (with Franco-African literature as an option).

Advising. New graduate students meet with the Department Chair before or during their first Quarter. Graduate Advisers for pre-M.A. students rotate throughout the year; any member of the regular professorial staff is empow-

ered to approve their program. Students who have established doctoral guidance committees or thesis committees (M.A. Plan C) are expected to have their program approved by the Chair of their committee.

All graduate students, regardless of degree objective, are required to have their program approved by a faculty member at the beginning of each quarter.

Disqualification and Appeal of Disqualification. Termination of graduate status may be recommended in cases of continued unsatisfactory scholarship, insufficient progress toward the degree or failure of examinations. Such decisions are made by the Chair of the Department in consultation with the Committee on Graduate Progress. Appeals should be directed to the Chair.

The Master of Arts Degree

Admission Requirements. The Graduate Record Examination Advanced Test in French and three letters of recommendation are required. A B.A. in French is desirable but not mandatory. Information is available from the French Department Graduate Secretary, 160 Haines Hall.

Foreign Language Requirement. For all candidates for the M.A. in French, the foreign language requirement will be fulfilled by passing a course of at least level 3 in either German, Latin, Spanish, or Italian, or by passing the University reading examination in one of these languages. Passing the ETS language examination with a score of 500 or more is considered as fulfilling this requirement. In special cases, substitution of another foreign language will be accepted if approved by the Chair of the Department. Students are required to complete the foreign language requirement before taking the M.A. examination (Plan A or B) or submitting their thesis (Plan C). All candidates for the M.A. must satisfy the Department as to their proficiency in spoken French.

Plans of Study

The Department offers three Master's programs:

— Plan A, designed for teachers of French at the secondary and junior college levels.

— Plan B (Comprehensive Examination Plan) and Plan C (Thesis Plan), leading to the Ph.D. in French.

Plan A: Course requirements: At least 12 courses in French including normally 201D, and 310A/310B or 370/495 (or any combination of one theory and one observation course). Among these 12 courses, the student will take at least seven courses in literature including at least three courses in each of two periods (one of which must be the modern period). To meet general University requirements, at least six courses must be at the graduate level.

Comprehensive Examination: Written examinations of three hours in length in each of the two periods prepared, a 2-hour examination in translation and literary composition, a 2-hour *explication de texte*, and an oral examination in French. These examinations are given twice a year (during the seventh week of the Fall and Spring Quarters) by a committee of four professors appointed by the Chair. At the discretion of the Department, a candidate may be permitted to take the examination a second (but not a third) time.

Plans B and C: Course requirements: At least 12 courses in French, including normally 201D, at least three courses in each of two periods, and at least one course from 202-207. At least eight of these courses must be at the graduate level. Students in Plan C may include 4 units of 598 credit for work on the thesis.

Plan B: Comprehensive Examination: Written examination of four hours in length in each of the two periods prepared, a 2-hour *explication de texte,* and an oral examination in French. These examinations are given twice a year (during the seventh week of the Fall and Spring Quarters) by a committee of four professors appointed by the Chair. At the discretion of the Department, a candidate may be permitted to take the examination a second (but not a third) time.

Plan C: Admission Requirements and Oral Qualifying Examination. Students may apply to the Chair of the Department for admission into Plan C after completion of at least six courses of graduate level (200-series), at least four of which must be literature courses in the French Department. The minimal admission requirements are: (1) 3.5 graduate G.P.A. in French (2) letters from two graduate professors in the Department specifically recommending admission into this plan.

Final admission into Plan C (i.e., permission to write the thesis) is contingent upon passing the Oral Qualifying Examination. This is a 1-hour oral examination in the two periods prepared, to be administered by a committee established by the candidate, consisting of three graduate professors in the French Department, including normally at least one specialist in each period. If the candidate fails this examination, the Committee will determine whether he/she be permitted another attempt, or whether he/she be advised to take the written comprehensive examination (Plan A).

Thesis. The thesis should demonstrate proficiency in the methods and concepts of literary research; a suitable length will normally be about 50 pages.

After passing the Oral Qualifying Examination the candidate should establish a 3-member Thesis Committee (normally but not necessarily the same body that administered the Oral), to be appointed by the Dean of the Graduate Division. A tentative outline of the proposed thesis must be approved by all three members *in writing* before work on the thesis is begun. Final approval of the thesis by all three members is also required.

Time to Degree. A reasonable time period for the M.A. is 1½ to 2 years.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	2-4	letter grade units	up to 4 units
597	2-8 units	S/U	up to 16 units
598	2-4 units	S/U	up to 4 units

596 is Directed Individual Studies or Research.

597 is Preparation for the Comprehensive Examination for Master's Degree or Qualifying Examination for the Ph.D.

598 is Research and Preparation of the Master's Thesis.

Terminal M.A. degree: Decision to award a terminal M.A. degree to students in Plans B or C is made by the M.A. examination committee on the basis of (1) M.A. examination papers, (2) oral examination and (3) overall appraisal of record.

Appeals. Appeals should be addressed to the M.A. committee.

The Ph.D. Degree

Admission Requirements. Completion of master's degree Plan B or C with recommendation for continuance by M.A. committee; outside applicants require an M.A. degree or the equivalent, and three letters of recommendation.

Admitted students holding the M.A. or *Licence és Lettres* 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 should be taken during the first year of residence. In case of failure it may be repeated a second time.

Information is available from the Departmental Graduate Secretary, 160 Haines Hall.

Foreign Language Requirement.

A) Two languages up to courses 5 and 6 respectively. These are to be chosen upon approval of the Guidance Committee among the four following: Latin, German, Russian and Spanish. Language requirements may also be satisfied by taking the Educational Testing Service (ETS) examination with level III corresponding to a score of 500, level V 550 and level VI 600. Substitution of another language when warranted by the nature of the student's specialization must be recommended by the student's Guidance Committee, and approved by the Chair of the Department.

B) When the nature of the student's 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.

C) Language requirements are to be completed before permission is granted to take the doctoral Qualifying Part II Examination.

Course Requirements. 1) at least three courses from the 202-207 series, including one from the 203 series; 2) at least four seminars, two of which should be in the candidate's proposed area of specialization; 3) at least two graduate courses in other departments related to the area of specialization. In addition, the candidate is expected to follow the Guidance Committee's suggestions in taking courses in preparation for the Doctoral Qualifying Examination.

Written Qualifying Examination. (1) Four written examinations of four hours each as follows:

(a) Focused specifically in the area of the prospective dissertation topic (e.g., an author, a specifically defined theme or genre over a limited period).

(b) Dealing with a more general subject related to the dissertation topic (i.e., the period of the author, the development of the theme or genre over one or more centuries).

(c) In a cognate field related to the methodology or approach the candidate proposes to employ in the dissertation.

(d) In the period not covered at the M.A. level.

It is understood that the topics to be dealt with in parts a, b, and c shall be determined by prior consultation of the candidate with the Doctoral Guidance Committee.

A student failing the Written Qualifying Examination may, at the discretion of the Guidance Committee, be permitted to take it a second (but not a third) time.

Oral Qualifying Examination

Upon passing the written examinations the candidate will be admitted to the Oral Qualifying Examination where the departmental members of his/her doctoral committee will be joined by two members from other departments. This examination, normally of two hours duration, will bear chiefly on parts (a) and (b) of the written examination, and on the proposed dissertation subject. The candidate is expected to submit a written outline of research plans before the oral examination.

Doctoral Guidance Committee: Upon admission to the doctoral program, the student will establish a Doctoral Guidance Committee consisting of at least three graduate professors, including (1) the Chair, normally in the student's proposed period of specialization and (2) a specialist in the period not covered at the M.A. level. This committee will administer the doctoral Written Qualifying Examination.

Final Oral Examination Following Completion of the Dissertation. (Defense of dissertation.) This examination is no longer required. This does not prevent individual doctoral committees from imposing this examination on a candidate.

Time to Degree. Estimated time: 15 to 18 quarters.

Candidate in Philosophy Degree. Students are eligible to receive the C. Phil. degree upon advancement to candidacy for the Ph.D.

Graduate Courses

201A. Theme. Course meets three times weekly. Advanced translation into French.

201B. Version. Course meets three times weekly. Advanced translation into English.

201C. La Dissertation Française. Course meets three times weekly. Advanced composition.

201D. Problems of French Literary Composition. Course meets three times weekly. Practical work of an advanced nature in the expression and presentation of literary research.

202. Explication de Textes. Mr. Bensimon

203A-203B-203C. French Literary Criticism.

203A. Topics in Literary Criticism from Aristotle to Sainte-Beuve.

203B. Modern Theories of Criticism.

203C. The Techniques of Literary Criticism. Mr. Coleman, Ms. Kao

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 Languages and Literatures who emphasize 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 Languages and Literatures who emphasize philology.

205A-205B-205C-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: Linguistics 100 or French 105, 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-215E. The Medieval Language and Literature. Ms. Burke

215A. Old and Middle French. This course is prerequisite to courses 215B-215E. 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.

216A-216H. The Renaissance. Mr. Bensimon

216A. Topics in early sixteenth century French literature.

216B. Topics in the Pleiade.

216C. Topics in late sixteenth century French literature.

216D. Ronsard.

216E. Rabelais and Prose Writers.

216F. Baroque Poetry.

216G. Montaigne.

216H. Theater.

217A-217I. The Seventeenth Century. Ms. Melzer

217A. Topics in Classical Theater.

217B. Topics in Non-Dramatic Literary Genres.

217C. Topics in Classical Prose and Thought.

217D. Moliere.

217E. Corneille.

217F. Racine.

217G. The Novel.

217H. Moralists.

217I. Religious Thought.

218A-218D. The Eighteenth Century. Mr. Coleman, Mr. Werner

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.

219A-219K. The Nineteenth Century. Mr. el Nouty, Mr. Gans

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.

220A-220P. The Twentieth Century. Ms. Kao, Mr. Reid

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 Anti-Novel.

220L. Surrealism.

220M. Existentialism.

220O. Poetry.

220P. Cinema and Literature.

221A-221D. French-African Literature. Mr. el Nouty

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.

Seminars

The following courses, 250A through 260B, may be repeated for credit.

150-250A. Studies in Medieval Literature (Introduction to the Provencal Medieval Poetry). Prerequisite: Senior or graduate status, or permission of the instructor. Raoul Blomme

250A-250B. Studies in Medieval Literature. Ms. Burke

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 Seventeenth Century. Ms. Melzer

254A-254B. Studies in the Eighteenth Century. Mr. Werner, Mr. Coleman

255A-255B. Studies in the Nineteenth Century. Mr. el Nouty, Mr. Gans

256A-256B. Studies in Contemporary Literature.

257A-257B. Studies in the 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. A particular problem of French literature and ideas.

261. Studies in French Linguistics.

262. Studies in Stylistics.

270. Introduction to Methods of Literary Research. Prerequisite: Graduate Standing. The course will be made up of lectures on aspects of literary research. It will range from bibliography to new critical approaches, and will call on specialists in each field.

Professional Courses

310A-310B. The Teaching of French in the Elementary School and at the Junior High Level.

310A. Prerequisite: consent of instructor. Theory of French teaching in the elementary school and at the junior high level. Classes meet three hours weekly. Required for the Standard Elementary Credential.

310B. Observation of language teaching in the elementary school and at the junior high level. Classes will meet as announced. 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. (½ course) 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

495. The Teaching of French in the Secondary Schools and at the College Level. Prerequisite: course 370. Theory of language teaching. Letter grade.

Individual Study and Research

596. Directed Individual Studies or Research. (½ to 1 course)

597. Preparation for the Comprehensive Examination for the Master's Degree or the Qualifying Examination for the Ph.D. (½ to 2 courses)

598. Research for and Preparation of the Master's Thesis. (½ to 1 course) Prerequisite: consent of instructor. A maximum of 4 units may be applied toward the M.A. degree requirements. Graded S/U.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 2 courses)

Geography

(Office, 1255 Bunche Hall)

Charles F. Bennett, Ph.D., *Professor of Biogeography.*
C. Rainer Berger, Ph.D., *Professor of Geography and Geophysics.*
Henry J. Bruman, Ph.D., *Professor of Geography.*
William A. V. Clark, Ph.D., *Professor of Geography.*
Gary S. Dunbar, Ph.D., *Professor of Geography.*
Huey L. Kostanick, Ph.D., *Professor of Geography.*
Richard F. Logan, Ph.D., *Professor of Geography.*
Tom L. McKnight, Ph.D., *Professor of Geography (Chair of the Department).*
Howard J. Nelson, Ph.D., *Professor of Geography.*
Antony R. Orme, Ph.D., *Professor of Geography.*
Jonathan D. Sauer, Ph.D., *Professor of Geography.*
Allen J. Scott, Ph.D., *Professor of Geography.*
Werner H. Terjung, Ph.D., *Professor of Geography.*
Norman J. W. Thrower, Ph.D., *Professor of Geography.*
Hartmut Walter, Ph.D., *Professor of Biogeography.*
Walter E. Westman, Ph.D., *Professor of Geography.*
Robert M. Glendinning, Ph.D., *Emeritus Professor of Geography.*
Clifford H. MacFadden, Ph.D., *Emeritus Professor of Geography.*
Joseph E. Spencer, Ph.D., *Emeritus Professor of Geography.*
Benjamin E. Thomas, Ph.D., *Emeritus Professor of Geography.*
J. Nicholas Entrikin, Ph.D., *Associate Professor of Geography.*
Gerry A. Hale, Ph.D., *Associate Professor of Geography.*
Christopher L. Salter, Ph.D., *Associate Professor of Geography.*
Stanley W. Trimble, Ph.D., *Associate Professor of Geography.*
James H. Johnson, Ph.D., *Assistant Professor of Geography.*
Frank H. Weirich, M.Sc., A.B.D., *Acting Assistant Professor of Geography.*
John D. Stephens, Ph.D., *Visiting Assistant Professor.*

General Information

Advising. For 1982-1983, Dr. Charles F. Bennett will be the Graduate Adviser. His office is Room 1251 Bunche Hall, Department of Geography, UCLA, Los Angeles, CA 90024.

Early in the first quarter of residence, each candidate is required to seek an informal guidance committee headed by an interim adviser from among the faculty, in consultation with the Graduate Adviser. The interim adviser may be changed as the candidate's plan and objectives change, subject to the normal courtesies of informing the Graduate Adviser and others involved.

The Department holds a review of all graduate students every Spring Quarter. To this end, all graduate students should have designated a committee chair or interim adviser and have completed a simple form detailing program and accomplishments prior to Spring Quarter. All faculty members are at the review meeting. The results of this review (Favorable, Favorable with Reservations, or Unfavorable) reported in writing to each student individually, determine whether or not the student is permitted to proceed toward their degree objective.

Apart from this review, all students are encouraged to meet with their advisers to review progress and plan future programs at least once a month, and preferably more frequently.

Major Fields or Subdisciplines. By its very nature, geography embraces many fields of endeavor within the physical, biological, and social sciences. In essence, geography is both a vital discipline that explores the interface between environment and society, and a method of study, a correlative science that seeks to establish relationships both within and between the many complex expressions of our surroundings. While acknowledging this, graduate students commonly focus their attentions on one or more of the following subdisciplines: geomorphology, climatology, biogeography, cultural, historical, urban, economic, political, cartography, environmental studies.

Graduate brochures are available by writing the Graduate Adviser, Department of Geography, UCLA, Los Angeles 90024.

The Master of Arts Degree

Admission Requirements. The Department of Geography admits students to the graduate program for the Fall, Winter or Spring Quarter.

The Department requires an undergraduate major or its equivalent; a bachelor's degree or its equivalent from an accredited college or university; a high grade point average (3.3) in courses taken in the junior and senior years and in the major field. Prospective students are required to take the Graduate Record Examination Aptitude Test (General Section only) and receive a minimum score of 1100 (Verbal and Quantitative scores combined); and in addition, provide the Department with three letters of evaluation from previous instructors. Students not meeting the grade point average requirements may be admitted in exceptional cases if their letters of evaluation and their Graduate Record Examination scores or other evidence indicate that they have unusual promise. Students may be admitted with subject deficiencies, but such deficiencies will have to be made up.

Requirements for students entering the graduate program from beyond departments of geography: Non-geography majors entering the geography program from another field will be required to show proficiency in six upper division geography courses (additional to those required for the M.A.) including three courses from Group I (The Environment) and three courses from Group II (Human Geography), embracing at least one course each from Groups Ia, Ib, IIa, and IIb.

Research Tool Requirement. At least one research tool is required for graduate study. This is a minimum requirement and is subject to approval by the graduate student's committee at both the M.A. and Ph.D. levels, prior to advancement to candidacy. A research tool might be a foreign language, or a series of mathematics or statistics courses. If a foreign language is approved, the requirement may be fulfilled by a series of courses (with a B average), taking of the Educational Testing Service (ETS) examination with a score of 500 or taking of a special departmental written examination.

Course Requirements. The work in residence must include at least nine courses plus Geography 200, including a minimum of seven courses at the graduate level, of which Geography 201, and at least one seminar in geography are required. The student's program must have the approval of the graduate student's committee. Geography 200 must be taken at the earliest opportunity.

Thesis or Comprehensive Examination Plan. *Committee.* At a time agreed upon by the student and his/her adviser, an official 3-person Graduate Division committee, including a Chair, will be appointed. This committee is responsible for the candidate's course of study henceforth, and supervises the preparation of the master's thesis or the Comprehensive Examination.

Thesis Plan. Under the Thesis Plan, each student 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 Graduate Division committee. The candidate should submit a written statement to all members of the thesis committee, describing in some detail the thesis proposal. This proposal should include the exact nature of the problem to be studied, 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.

Comprehensive Examination. All formal coursework, including the completion of the research tool requirement, must be completed before the examination is attempted. The Comprehensive Examination normally is given in the final 2-week period of the quarter in which the candidate completes his/her work for the degree. It will normally consist of three half-day written examinations embracing a general paper and two further papers drawn from the broad divisions of geography. The examination is designed to test for broad grasp of subject, as well as the more specialized abilities of the candidate. A student who fails any part of the Comprehensive Examination may be reexamined once. Such reexaminations must take place within one calendar year of the failure. A student who completes the M.A. degree by the Comprehensive Examination Plan may not continue for a Ph.D. degree in this department.

Advancement to Candidacy. For both plans: A student must file an application for advancement to candidacy no later than the second week of the quarter in which the degree will be awarded.

Time to Degree. Normal progress for the M.A. degree is from graduate admission to completion of required courses three (3) quarters. From graduate admission to award of the M.A. degree six (6) quarters.

An M.A. degree must be completed within five calendar years of admission to graduate status at UCLA.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	2-8	S/U	No limit
597	2-8	S/U	No limit
598	2-8	S/U	No limit

Only one 500 series course may be applied to the minimum course requirements for the master's degree and to the minimum graduate course requirement.

A student may not take Geography 596 in a given term unless he/she is also taking a least one formal course during that term.

In any given term a student may take no more than 8 units of Geography 596.

Disqualification. A graduate student could be terminated for failure to maintain a grade point average of at least 3.0, failure of the Comprehensive Examination (after second attempt). The decision to terminate would be made by a vote of the entire faculty in residence at the time and not by one or a few individuals.

Appeals. Student appeals would be directed to the faculty.

The Ph.D. Degree

Admission Requirements. The Department of Geography admits students to the doctoral program for the Fall, Winter or Spring Quarter.

The Department requires a B+ (3.5) grade point average or higher, plus a strong showing on the Graduate Record Examination Aptitude Test (minimum score of 1100 — Verbal and Quantitative scores combined), plus strong letters (3) of recommendation.

An M.A. or M.S. degree, with a geography specialty and a high grade point average (3.5) in graduate studies is recommended for all students undertaking work toward the Ph.D. degree. No screening examination is required. However, any student entering the doctoral program who has not previously written a master's thesis must, during his/her first quarter of residence, produce clear evidence of substantive research and writing ability, to the satisfaction of the faculty. Any student accepted for the Ph.D. program without having officially completed a master's degree must complete the master's degree within two quarters or be terminated as a Ph.D. candidate. Under exceptional circumstances, a student may proceed directly toward the Ph.D. degree without taking a master's degree if the following conditions are met:

(1) The student must be enrolled in the UCLA M.A. program in geography and have a superior (4.0) grade point average.

(2) The student must be recommended for a direct Ph.D. by the M.A. guidance committee who will bring the matter before the entire faculty.

(3) The student must have three letters of recommendation in addition to one from his/her interim adviser or chair.

(4) The student must receive the approval of at least two-thirds of the current Geography faculty in residence by secret ballot.

Research Tool Requirement. At least one research tool (foreign language, statistics, taxonomy, surveying, laboratory methods, etc.) is required for graduate study. This is a minimum requirement and is subject to approval by the graduate student's committee at both the M.A. and Ph.D. levels, prior to advancement to candidacy. The research tool may be fulfilled by a series of courses in the approved tool, or if a foreign language, by the taking of the Educational Testing Service (ETS) examination with a score of 500 or taking of a special departmental written examination. If a series of courses are taken, a B average must be received.

Course Requirements. All Ph.D. students must satisfactorily complete Geography 200 and 201 if these have not already been taken at the M.A. level. Students are also required to take at least three graduate geography courses additional to their M.A. coursework (excluding 200, 201, and the 500 series) and three upper division or graduate courses in one or two allied fields to their main field, subject to approval of their committee. The allied field requirement may be met at any time during graduate status. Geography 200 must be taken at the earliest opportunity.

Written and Oral Qualifying Examinations. *Written Qualifying Examinations.* The Written Qualifying Examinations are administered by a student's informal guidance committee and consist of five written papers arranged as follows: three substantive fields of geography, one general paper covering the entire range of geography, and one small field research problem. The field problem will require one full day in the field, followed by one full day in which field results are prepared for presentation. All other papers will be of four hours duration. The examination may be spread over a period of not more than two weeks. This examination should be taken no later than the end of the sixth quarter of the Ph.D. program. If the examination, or any portion thereof, is failed, the student may make one further attempt. This attempt may not be sooner than three months nor longer than one year from the first examination.

Oral Qualifying Examination. The Oral Qualifying Examination is conducted by the candidate's official Ph.D. dissertation committee. This examination focuses on the dissertation research proposal prepared by the candidate and distributed to all committee members at least one month prior to the oral. This proposal should specify the objectives, methodology, and scientific background of the research envisaged. Successful completion of the Oral Qualifying Examination implies acceptance by the committee of the student's qualifications for doctoral research and approval in principle of the dissertation proposal, subject to such minor modifications in design and methodology as the committee may recommend. A student who has successfully completed the Oral Qualifying Examination is eligible for advancement to candidacy. In instances of failure, the oral examination may be taken once more only. At the end of the candidate's successful Oral Qualifying Examination, the chair and members of the committee, in consultation with the student, shall determine which of its members will guide, read, approve and certify the dissertation. At least two members from the student's department and at least one outside member must be certifying members of the doctoral committee. At least three members of the committee must hold an appointment as associate professor or professor.

The Dissertation. The dissertation is the ultimate focus of each student's 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.

Doctoral Committee. The Geography Department has no special requirements other than those of the Graduate Council.

Final Oral Examination Following Completion of the Dissertation. Optional with doctoral committee. A final oral defense of the dissertation may be required by the dissertation

committee. This examination may be held at any time mutually agreed upon by the candidate and his/her committee, provided that the dissertation is essentially complete. In instances of failure, only one reexamination is permitted.

Time to Degree. From admission to the Ph.D. program to the Qualifying Examination — six quarters. From Oral Qualifying Examination to award of degree — five quarters. From graduate admission to the award of the Ph.D. degree — 15 quarters.

Candidate in Philosophy Degree. All students who have been advanced to candidacy for the Ph.D. degree are eligible to receive this degree.

Disqualification. A graduate student could be terminated for failure to maintain a grade point average of at least 3.0, failure on Written or Oral Qualifying Examinations (after second attempt), or for failure to proceed to the qualifying examinations after being given extensions of time. The decision to terminate would be made by a vote of the entire faculty in residence at the time and not by one or a few individuals.

Appeals. Student appeals would be directed to the faculty.

Other Relevant Information. A Ph.D. degree must be completed within seven calendar years from the initiation of work on the degree (for candidates from beyond UCLA), or within seven calendar years from admission to graduate status at UCLA (for candidates who obtain M.A. degrees from UCLA).

Graduate Courses

Courses Required of all Entering Graduate Students

200. Trends in Contemporary Geography. (½ course) Lecture, three hours. Prerequisite: Graduate Standing. An analysis and interpretation of contemporary geography with emphasis on research trends in major subfields of the discipline, each subfield being examined by a faculty expert. Graded S/U.

201. History of Geography. Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: consent of instructor. A survey of geography from classical times onward, with emphasis on the professionalization of geography in Europe and North America from 1870 to present. Mr. Dunbar

Group I: The Environment

202. Advanced Geomorphology. (Formerly numbered 212.) Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course M102 or equivalent, or consent of instructor. An extended study of selected geomorphic processes and landforms. Mr. Orme

203. Seminar: Geomorphology. (Formerly numbered 213.) Discussion, three hours; reading period, one hour. Prerequisites: course 202 or equivalent and consent of instructor. Selected geomorphic topics with emphasis on current research frontiers and techniques. May be repeated for credit. Mr. Orme

204A-204B-204C. Advanced Climatology. Lecture, three hours; laboratory, one hour. Prerequisites: course 104, first year of calculus, acquaintance with FORTRAN IV, or consent of instructor. Course must be taken sequentially. 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. (Formerly numbered 215.) Discussion, three hours; reading period, one hour. Prerequisites: course 204 or equivalent and consent of instructor. Selected topics. May be repeated for credit. Mr. Terjung

208. Advanced Biogeography: Plants. (Formerly numbered 262.) Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: courses 108, 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. (Formerly numbered 260.) Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: courses 112, 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. (Formerly numbered 265.) Discussion, three hours; reading period, two hours. Prerequisites: courses 208, 212 or equivalent and consent of instructor. Research projects related to or growing out of course 208 or 212. May be repeated for credit.

215. Seminar: Quaternary Studies. (Formerly numbered 216.) Discussion, three hours; reading period, two hours. Prerequisites: courses 202 or 204 or 208 or 212; or 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. (Formerly numbered 292.) 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 and consent of instructor. Discussion of the basic technical, regional planning and public policy issues in water quality management. Mr. Westman

229. Seminar: Man and Environment. (Formerly numbered 266.) 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. Mr. Walter

Group II: Human Geography

232. Advanced Cultural Geography. (Formerly numbered 220.) Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course 132, or 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. (Formerly numbered 225.) Discussion, three hours; reading period, two hours. Prerequisites: course 232, 236, or equivalent and consent of instructor. Discussions centered around particular topics in cultural geography; topics may vary from year to year. May be repeated for credit.

236. Advanced Historical Geography of the United States. (Formerly numbered 222.) Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: course 136 and consent of instructor. Some major themes in American historical geography. Mr. Dunbar

237. Seminar: Historical Geography. (Formerly numbered 223.) Discussion, three hours; reading period, two hours. Prerequisites: course 236 and 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 will be used as specific examples of differing techniques of study in geopolitics. Mr. Kostanick

241. Seminar: Political Geography. (Formerly numbered 245.) Discussion, three hours; reading period, two hours. Prerequisites: course 240 or equivalent and consent of instructor. Related research projects growing out of course 240. May be repeated for credit. Mr. Kostanick

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: course 145 and 146 or consent of instructor. Methods of locational analysis as applied to problems of regional growth and development.

249. Seminar: Economic Geography. (Formerly numbered 235.) Discussion, three hours; reading period, two hours. Prerequisite: course 248 or equivalent, and consent of instructor. Related research projects growing out of course 248. May be repeated for credit.

250. Urban Systems. Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: course 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. (Formerly numbered 255.) Discussion, three hours; reading period, two hours. Prerequisites: course 250 or equivalent, and 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: course 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. Entrikin

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 intraurban migration. Mr. Clark

Group III: Procedures

260. Advanced Field Analysis: Physical Elements. (2 courses) Class meets once a week from 8-5. Prerequisites: one or more courses from 202, 203, 204, 205, 215. Field methods and analysis applied to the physical environment, especially in southern California and with particular reference to various aspects of geomorphology, hydrology, climatology, and associated human activities. Mr. Trimble

261. Advanced Field Analysis: Cultural Geography. (2 courses) Class meets once weekly from 8-5, mainly in the field. Prerequisites: one or more courses from 232, 233, 250, 251. Field methods and analysis applied to the cultural landscape, especially in southern California and particular reference to settlement, agriculture, and environmental modification. Mr. Salter

262. Advanced Field Analysis: Biogeography. (2 courses) Field, ten hours per week. 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. (Formerly numbered 201.) 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. (Formerly numbered 272.) Laboratory, three hours; independent work, 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 is placed on terrain representation, quantitative and computer mapping, scribing, color separation, and reproduction of maps. Mr. Thrower

269. Remote Sensing of Environment. (Formerly numbered 274.) Laboratory, three hours; independent work, 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 is placed on the analysis of landscapes and the interpretation of interrelationships of individual features in their physical and cultural complex. Mr. Thrower

M270. Advanced Quantitative Analysis. (Formerly numbered M276; same as Architecture and Urban Planning M215A.) Lecture, two hours; laboratory, two hours. Prerequisite: course 171 or equivalent or consent of instructor. Advanced topics in the utilization of mathematical and statistical techniques for geographic research. Emphasis on linear models, factor analysis and grouping procedures as applied to geographic data bases. Mr. Clark

M272. Spatial Statistics. (Formerly numbered M277; same as Architecture and Urban Planning M215B.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: Mathematics 50B or course 171 and 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.

273. Seminar: Model Building for Spatial Analysis. (Formerly numbered 279.) Discussion, three hours. Prerequisite: course M270 or consent of instructor. Discussions of the philosophy and methodology of model building. The focus will be on the problems unique to models of spatial structure. Individual research topics will be emphasized. May be repeated for credit. Mr. Clark

M278. Dating Techniques in Environmental Sciences and Archaeology. (Formerly numbered M271: same as Anthropology M216.) Lecture, three hours. Prerequisite: consent of instructor. A colloquium devoted to topics in dating techniques in environmental sciences, archaeology, and physical anthropology as well as laboratory instruction and experimental work. May be repeated for credit. Mr. Berger

Group IV: Seminars in Regional Geography

280-291. Selected topics for each seminar. Each may be repeated for credit. Lecture, two hours; discussion, two hours.

280. North America. (Formerly numbered 290A.) Prerequisite: course 180 or consent of instructor. Mr. McKnight, Mr. Nelson

281. Middle America. (Formerly numbered 290B.) Prerequisites: course 181 and consent of instructor. Mr. Bennett, Mr. Bruman

282. South America. (Formerly numbered 290C.) Prerequisites: course 182 and consent of instructor. Mr. Bennett, Mr. Bruman

283. Europe. (Formerly numbered 290D.) Prerequisites: course 183 and consent of instructor. Mr. Kostanick, Mr. Thrower

284. Soviet Union. (Formerly numbered 290E.) Prerequisites: course 184 and consent of instructor. Mr. Kostanick

285. South and South East Asia. (Formerly numbered 290F.) Prerequisites: course 185 and consent of instructor.

286. Eastern Asia. (Formerly numbered 290G.) Prerequisites: course 186 and consent of instructor. Mr. Salter

287. Middle East. (Formerly numbered 290H.) Prerequisites: course 187 and consent of instructor. Mr. Hale

288. Northern Africa. (Formerly numbered 290I.) Prerequisites: course 188 and consent of instructor. Mr. Hale, Mr. Thomas

289. Middle and Southern Africa. (Formerly numbered 290J.) Prerequisites: course 189 and consent of instructor. Mr. Hale

290. Australia. (Formerly numbered 290K.) Prerequisites: course 190 and consent of instructor. Mr. McKnight

291. The Arid Lands. Prerequisites: courses 102, 104, 106, 108, 116, 120, 148, or equivalent and consent of instructor. An investigation of the physical and cultural complexes of the world's arid regions. Salient factors emphasized 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 the instructor. May be repeated for credit.

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 modern philosophy of geography. Mr. Entrikin

495. Teaching of College Geography. (½ course) 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. Mr. McKnight

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses) Prerequisite: consent of instructor.

597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examination. (½ to 2 courses) Special individual study. Prerequisite: consent of instructor.

598. Research for and Preparation of the Master's Thesis. (½ to 2 courses) Independent study. Prerequisite: consent of instructor.

599. Research for and Preparation of the Doctoral Dissertation. (½ to 2 courses) Independent study. Prerequisite: consent of instructor.

Institute of Geophysics and Planetary Physics

(Office, 3871 Slichter Hall)

Orson L. Anderson, Ph.D., *Professor of Geophysics.*
C. Rainer Berger, Ph.D., *Professor of Geophysics, Geography and Anthropology.*
Arthur L. Boettcher, Ph.D., *Professor of Geology and Geophysics.*
Friedrich H. Busse, Ph.D., *Professor of Planetary Physics.*
Paul J. Coleman, Jr., Ph.D., *Professor of Planetary Physics.*
Richard E. Dickerson, Ph.D., *Professor of Chemistry.*
W. Gary Ernst, Ph.D., *Professor of Geology and Geophysics.*
Isaac R. Kaplan, Ph.D., *Professor of Geology and Geochemistry.*
William M. Kaula, D.Sc., *Professor of Geophysics.*
Charles F. Kennel, Ph.D., *Professor of Physics and Geophysics.*
Leon Knopoff, Ph.D., *Professor of Geophysics and Physics and Associate Director of the Institute of Geophysics and Planetary Physics.*
R.L. McPherron, Ph.D., *Professor of Planetary Physics and Geophysics.*
John P. McTague, Ph.D., *Professor of Chemistry.*
J. William Schopf, Ph.D., *Professor of Geology and Geophysics.*
Ronald L. Shreve, Ph.D., *Professor of Geology and Geophysics.*
John T. Wasson, Ph.D., *Professor of Geochemistry and Chemistry.*
Robert E. Holzer, Ph.D., *Emeritus Professor of Geophysics.*

The Institute of Geophysics and Planetary Physics was established to encourage fundamental research and graduate instruction in Geophysics, Geochemistry and Space Physics. Faculty members of associated departments are prepared to supervise graduate work in a variety of fields: atmospheric physics, physics of the radiation belts, interplanetary physics and solar physics, geophysical fluid dynamics, high pressure physics, tectonophysics, geochemistry, nuclear geophysics, age determination, gravitation, physical oceanography and marine geophysics, seismology, physics of the deep interior, and exploration geophysics. For further information, contact the Institute of Geophysics and Planetary Physics.

Undergraduate students with an interest in graduate study in Geophysics are advised to complete a major in physics, mathematics or chemistry. Attention is also drawn to opportunities to complete an undergraduate course of studies in Geophysics and Space Physics and in Applied Geophysics. For information concerning these programs, consult the catalog listings for the Department of Earth and Space Sciences.

Germanic Languages

(Office, 310 Royce Hall)

Ehrhard Bahr, Ph.D., *Professor of German (Chair of the Department).*
Franz H. Bäuml, Ph.D., *Professor of German.*
Wolfgang Nehring, Ph.D., *Professor of German.*
Eli Sobel, Ph.D., *Professor of German.*
Hans Wagener, Ph.D., *Professor of German.*
Donald J. Ward, Ph.D., *Professor of German and Folklore.*
Terence H. Wilbur, Ph.D., *Professor of Germanic Linguistics and Philology.*
Gustave Otto Arlt, Ph.D., LL.D., *Emeritus Professor of German.*
Carl William Hagge, Ph.D., *Emeritus Professor of German.*
Wayland D. Hand, Ph.D., *Emeritus Professor of German and Folklore.*
William J. Mulloy, Ph.D., *Emeritus Professor of German.*
Victor A. Oswald, Jr., Ph.D., *Emeritus Professor of German.*
Erik Wahlgren, Ph.D., *Emeritus Professor of Scandinavian and Germanic Languages.*
Janet R. Hadda, Ph.D., *Assistant Professor of Yiddish.*
Robert S. Kirsner, Ph.D., *Assistant Professor of Dutch and Afrikaans.*
Alexander Stephan, Ph.D., *Associate Professor of German.*
Vern W. Robinson, Ph.D., *Emeritus Associate Professor of German.*
Jesse L. Byock, Ph.D., *Assistant Professor of Old Norse and Medieval Scandinavian.*
Thomas C. Christy, Ph.D., *Assistant Professor of Germanic Linguistics and Philology.*
Dieter Jedan, Ph.D., *Assistant Professor of German.*
Kathleen Komar, Ph.D., *Assistant Professor of German and Comparative Literature.*
Steven D. Martinson, Ph.D., *Assistant Professor of German.*

•

Marianna D. Birnbaum, Ph.D., *Adjunct Associate Professor of Hungarian.*

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.

To obtain brochures and other information: Department of Germanic Languages, 310 Royce Hall, UCLA, Los Angeles, CA 90024. Tel.: (213) 825-3955.

The Master of Arts Degree

Admission Requirements.

(a) A bachelor's degree in German with a minimum grade point average of 3.0 from an accredited U.S. institution or the equivalent. Candidates deficient in their undergraduate preparation, will be required to take remedial courses, as recommended by the departmental Graduate Adviser. A placement examination in the German language or literature may be required of entering graduate students.

(b) Three letters of recommendation are required.

Advising. There are two departmental Graduate Advisers. At present these are: Professor Wolfgang Nehring, (advisees A-L) Office: 326 Royce Hall; Professor Franz Bäuml (advisees M-Z), Office: 328 Royce Hall, Department Telephone Number: (213) 825-3955.

The Graduate Advisers evaluate student preparation for the M.A. program and/or Ph.D. program, and assess progress toward the degree. They advise students on planning their studies, course selection and preparation for the M.A. examinations. They meet with each student at least once every quarter and maintain records of these interviews. Those students who choose the M.A. Thesis Plan (see *Thesis and Comprehensive Plan,* below) will, in addition, be guided by a thesis adviser and a guidance committee.

Major Fields and Subdisciplines. There are two M.A. plans that differ with respect to the course requirements (see *Course Requirements,* below) and the comprehensive examinations (see *Thesis and Comprehensive Plan,* below). Plan A: for students who plan to terminate their studies with the M.A. and a teaching credential. Plan B: 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., the student must pass the GSFLT (Graduate School Foreign Language Test) reading examination in French. The test is administered through University Extension at the beginning of each quarter, including the summer. The required score for passing the examination is 500.

Course Requirements. Plan A: A minimum of nine upper division and graduate courses, of which at least five courses must be graduate level, i.e., 200 or 500 series (see *500 Series Course Limitations,* below). In addition to the above, courses 128, 129 (or the equivalent), and 370 are required. Undergraduate credit for these courses (or their equivalent) is applicable in satisfication of these requirements.

Plan B: A minimum of nine upper division and graduate courses, of which at least six courses must be graduate level, i.e., 200 or 500 series (see *500 Series Course Limitations,* below). One seminar must be included.

Thesis and Comprehensive Plan. Candidates for the M.A. degree in German have the choice of the Thesis Plan or the Comprehensive Plan.

Thesis Plan. A thesis committee will be established no later than the end of the fourth quarter of graduate study. At that time the thesis committee evaluates the proposal for the thesis. The M.A. thesis committee consists of four members, one of whom is designated director of the thesis. The director of the M.A. thesis is to be chosen by the candidate; the other members are appointed by the Department Chair. No committee member from outside the Department is required. After acceptance of the thesis, the candidate must pass a 2-hour oral examination which will be an examination in the field of the thesis as well as in the fields listed below under the Comprehensive Plan.

Comprehensive Plan. Examinations are offered each quarter, beginning with the written part during the third week of each quarter (i.e., Fall, Winter, and Spring). Under exceptional circumstances the Chair of the Department will receive student petitions for M.A. examinations during the Summer recess. For details of petition procedure, consult the Departmental Policies. The comprehensive examination committee is appointed by the Chair of the Department. The committee consists of at least four faculty members, including one linguist.

Membership of M.A. committee is announced at the beginning of the Spring Quarter for the following academic year.

One 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, to be followed by a 1-hour oral examination.

Part I 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 II of the written examinations covers major works and authors of German literature from earliest times to the present and concepts of literary criticism. After the candidates have taken the written examination, the M.A. committee decides whether they may proceed to the oral examination. If a candidate fails the oral examination, the M.A. committee decides whether the candidate must repeat the entire examination or only the oral portion. Each M.A. candidate is entitled to *one* repeat of the examinations without petition.

Students who apply for an M.A. under Plan B (to proceed toward the Ph.D.) and are awarded a terminal M.A. may repeat the examinations if they choose not to have the M.A. degree officially awarded before the reexamination.

Time to Degree. Estimated time to the M.A. degree for a full-time student with no deficiencies upon admission to graduate status and

taking a full course load, is three to five quarters; estimated time to the degree for teaching assistants is six quarters.

500 Series Course Limitations. Individual study courses 596, 597, and 598 are graded Satisfactory (S) or Unsatisfactory (U). Course 596 may be taken twice during a graduate student's studies, including progress toward the Ph.D. degree; course 597 may be taken *once* before the M.A. degree; course 598 may be taken three times. However, only *one* course in the 500 series may count toward the M.A. course requirements.

Disqualification. A student who fails to maintain an overall grade point average of 3.00, is immediately placed on academic probation. If in the first quarter of probationary status, the student maintains a grade point average of 3.00, the Department will normally recommend extension of probationary status for another quarter. If at the end of the first quarter of probationary status, a student has not maintained a grade point average of 3.00 for that quarter, the Department will normally recommend dismissal. Every recommendation to terminate a student for reasons other than failure to maintain a grade point average of at least 3.00 will be discussed and decided upon by the Department faculty.

Appeals. The student may appeal to the Department, in writing, any recommendation for termination.

The Ph.D. Degree in Germanic Languages

Admission Requirements. (a) An M.A. degree in German from an accredited U.S. institution or equivalent (e.g. *Staatsexamen* in German). The Graduate Advisers will review the records of students entering from another institution. If significant deficiencies in previous training are noted, they will notify the students in writing and make appropriate study or course recommendations. All deficiencies must be removed prior to the student's application for admission to candidacy for the qualifying examinations leading to the Ph.D. degree. A student who has gained admission to the doctoral program 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.

(b) Three letters of recommendation are required.

Advising. As soon as is possible after admission to the doctoral program, the student, after consultation with the Graduate Adviser, will secure the consent of those faculty members he/she wishes to serve on his/her Doctoral Guidance Committee. This Committee is appointed by the Department Chair. The Committee is comprised of at least two professors representing the student's major field and at least one professor representing the student's minor field. It guides the student's preparation for the Ph.D. Qualifying Examinations. Changes in the composition of this Committee may be made at the written request of the student and with the consent of the Committee members concerned and of the Department Chair. The student is to arrange periodic meetings with the Committee members. The Guidance Committee, in consultation with the student, decides when the student may be permitted to take the Ph.D. Qualifying Examinations. (See *Written and Oral Qualifying Examinations*, below).

Major and Minor Fields of Study. At the beginning of their work toward the doctorate or as soon as possible thereafter, the students shall declare their major and minor fields. The field in which the student intends to present a dissertation will be designated as the major field and will be selected from the four fields in which the degree is offered: (a) German Literature, (b) Germanic Philology and Linguistics, (c) Scandinavian Literature and Philology, or (d) Germanic Folklore.

Candidates who choose German Literature as their major field will be required to choose one of the following: (a) German Literature Before 1700 or (b) German Literature From 1700 to the Present.

The minor field may be chosen 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) Scandinavian Literature and Philology; (6) Germanic Folklore; (7) Yiddish; (8) Dutch-Flemish-Afrikaans. Students with a major field in German Literature may not choose options (1)-(3). Students, except those majoring in Scandinavian, may substitute the following course minor for the formal minor: They take four graduate courses (excluding German 217 and all literature courses taken prior to the award of the M.A. degree) in one of the other fields in which the degree is offered or four appropriate courses in Yiddish or Dutch-Flemish-Afrikaans. Students may also choose a minor field from outside the Department provided that it relates to the prospective dissertation topic. In such cases, the student will meet with the chair of the Guidance Committee to discuss the needs, value, and feasibility of an extradepartmental minor. The student will enlist the support of an extradepartmental faculty member who will sponsor the student's minor field. The student will then draft a proposal for the extradepartmental minor that will include a delineation of the areas for which the student will be responsible on the minor field Written Qualifying Examination. The extradepartmental sponsor must write a letter of support to the Chair of Germanic Languages. The student proposal and the faculty supporting letter will then be presented at a departmental meeting for faculty approval. The proposal must be approved by majority vote of the Department members present at that meeting. Scandinavian majors must obtain the approval of the Scandinavian Section.

Foreign Language Requirement. In addition to French, a second language examination is required either in a modern Scandinavian language or in Dutch-Flemish-Afrikaans or in Latin or in Yiddish (substitution of another language may be approved by petition to the Department).

Course Requirements. There are no course requirements *per se* for the doctorate in Germanic Languages. However, the following rules apply: (a) Students must have successfully completed at least three seminars in residence before becoming eligible to take the Qualifying Examinations for the Ph.D. (b) Specific course requirements may be assigned to new students in the doctoral program by the Graduate Adviser (see *Admission Requirements*, above). (c) Students may choose to fulfill their minor field requirements by taking specific courses rather than being tested in the minor field on the Ph.D. Qualifying Examinations. These provisions are outlined in detail in the sections on *Major and Minor Fields of Study* and *Written and Oral Qualifying Examinations.*

Written and Oral Qualifying Examinations. The Guidance Committee consults with the student not later than three months (i.e., one quarter) before the student intends to take the major field qualifying examinations so that the Committee can determine the student's progress and provide additional counseling. Prior to the major field examinations, the members of the Committee decide if the student is prepared and should be admitted to the examinations. In case of a negative decision, the student must be informed about noted deficiencies. For the minor field examinations, the Guidance Committee may delegate these decisions to a subcommittee. When the Guidance Committee has determined that the student is prepared to take the Qualifying Examinations, the chair of the Committee will schedule the examinations. The written examinations consist of three parts unless the student opts for the course minor, in which case it will consist of two parts:

1. First half of major field: (3 hours)
2. Second half of major field: (3 hours)
3. Minor field: (3 hours)

The student may elect to 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.

A student who has opted for the formal minor and fails the written examination is not permitted to switch to the course minor.

Advancement to Candidacy. Advancement to candidacy will take place when the student has (a) passed the graduate reading examination in French; (b) passed a departmental reading examination either in a modern Scan-

dinavian language or in Dutch-Flemish-Afrikaans or in Latin or in Yiddish (substitution of another language may be approved by petition to the Department); (c) successfully completed three seminars; (d) passed the Qualifying Examinations for the doctorate. After completion of the written examinations, the Committee, and all interested members of the Department will meet and decide whether the student has passed or failed. The student will be informed of the results, in writing by the Department Chair within two weeks after the administration of the examinations. In case of failure, the Guidance Committee and other interested members of the Department will decide when the candidate will be permitted to repeat the examinations. A repetition of the major examination includes both parts of the major field. The student must be informed in writing of major deficiencies. At least one quarter, normally, should elapse before the second attempt by the student. If the student should fail the examination twice, the faculty of the Department must decide whether the student may be permitted another repeat. When the student has completed the written examinations successfully, the Chair of the Guidance Committee will schedule an oral examination to be given as soon as possible after completion of the written examinations. The doctoral committee to administer this oral examination is nominated by the Department Chair upon the advice of the Guidance Committee and is appointed by the Dean of the Graduate Division. The doctoral committee is made up of at least three members of the Guidance Committee and not fewer than two members from other departments. The chair of the doctoral committee will schedule the oral examination to be given as soon as possible after completion of the written examination. The student who passes the oral examination advances to candidacy and proceeds to the writing of the dissertation. Upon completion of the dissertation and after its acceptance by the certifying members of the doctoral committee, the student may be required to defend the dissertation in a Final Oral Examination for the Ph.D.

The Candidate in Philosophy Degree. A student who has successfully completed both the Written and the Oral Qualifying Examinations, and fulfilled all other requirements for the Ph.D. other than the dissertation may submit a formal request to be officially awarded the degree, Candidate in Philosophy. Application for this degree may be made on the Advancement to Candidacy form. The award of this degree is not a requirement for the Ph.D. degree.

Time to Degree: Estimated time for the Ph.D. degree for a full-time student with no deficiencies upon admission to the Ph.D. program and taking a full course load, is six quarters (after the M.A.).

Disqualification.

1. A student who fails to maintain an overall grade point average of 3.00, is immediately placed on academic probation. If, in the first quarter of probationary status, the student maintains a grade point average of 3.00, the Department will normally recommend extension of probationary status for another quarter. If, at the end of the first quarter of probationary status, a student has not maintained a grade point average of 3.00 for that quarter, the Department will normally recommend dismissal.

2. A student who fails any part of the Written or Oral Qualifying Examinations three times will be disqualified.

3. A student who does not complete the dissertation (including its oral defense, if required) within seven years after passing the Qualifying Examinations for the Ph.D., is subject to dismissal. If a completed first draft of the dissertation is not submitted to the chair of the doctoral committee within five years after the qualifying examinations, the student is subject to dismissal. Every recommendation to terminate a student for reasons other than failure to maintain a grade point average of at least 3.00 will be discussed and decided upon by the Department faculty.

Appeals. The student may appeal to the Department, in writing, any recommendation for termination.

Lower Division Courses

1G. Elementary German for Graduate Students. (No credit) Lecture, four hours per week. To provide preparation for Graduate Division foreign language reading requirement

Upper Division Courses

Courses open to Graduate Students in German.

121H. Special Problems in Literature.
121I. The German Film in Cultural Context.
122. Studies in German Literature Before 1750.
123. Goethe.
124. Romanticism.
126. Advanced Study in Modern Literature.
127. Advanced Study in Contemporary Literature.
128. Advanced Composition, Grammar and Conversation.
129. German Phonetics.
130. Methodology of Literary Criticism.
132. Goethe's *Faust*.
134. German Folklore.
195. Senior Thesis Course.
199A-199ZZ. Special Studies. (½ to 1 course)

Graduate Courses

201A. Bibliography of German Literary History. Study of the various kinds of bibliographies, reference works, handbooks, lexica, series publications, journals, literary histories and related materials necessary for advanced studies and research in literary and philological problems. Practical exercises in the analysis and compilation of bibliographical data.
Mr. Sobel

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 are combined with a study of the socio-cultural contexts in which the works of the medieval period were produced and performed.
Mr. Bäuml

202B. Readings in Middle High German Literature. This course is essentially a continuation of German 202A and will provide the student with the opportunity to do extensive reading of the literary monuments of the medieval period in Germany. The course will also introduce the student 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. The medieval songs of courtly performers, beginning with Der von Kürenberg and ending with Johannes von Hadlaub, will be analyzed. Study of the socio-cultural 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. Sobel

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. Sobel, 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, Gebner, Klopstock, Mendelssohn and Wieland. Mr. Bahr

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

207A. Classicism: Goethe. Selected topics from the works of Goethe in the period 1786-1832, such as *Iphigenie auf Tauris, Torquato Tasso, Wilhelm Meisters Lehrjahre, Die natürliche Tochter, Pandora,* and p[illegible] selections. Mr. Bahr

207B. [illegible]ssicism: Schiller. Selected topics from the critical and dramatic works of Schiller in the period of 1793-1805, such as *Über Anmut und Würde, Uber das Erhabene, Wallenstein, Maria Stuart, Jungfrau von Orleans and Wilhelm Tell.* Mr. Bahr

208. Romanticism. Analysis of selected works of the Romantic period. 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, socio-political 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. Wagener

210B. Expressionism and Neorealism. Historical and sociological background of the period 1910-1933. Literary magazines, theoretical writings, poetry of Expressionalism and Dadaism, Expressionist dramas and shorter narratives. Definition and representative works of Neorealism.
Mr. Stephan, Mr. Wagener

210C. 20th Century Novel to 1945. Analysis of selected twentieth-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 of 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 will be analyzed and placed in the context of literary, cultural and political trends.
Mr. Stephan

211B. Contemporary Lyrics and Drama. A study of selected dramas and poems of 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 Bracht will be analyzed and placed in the context of literary, cultural and political trends. Mr. Stephan

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. 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. 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. 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 folksongs 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 folksong 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 socio-cultural 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 archeological, historic and philological evidence. Methods of comparative ethnography, religion, and myth will be used to interpret the evidence.
Mr. Ward

251. Seminar in Syntax and Phonology of German. Topics chosen from the field of contemporary German syntax and phonology. Choice of the seminar topic will depend upon 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 are chosen from the field of historical German phonology and syntax according to the needs and preparation of the students enrolled; topics such as 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 stress 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 problems, literary or philological, 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. Sobel

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. Sobel, 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

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 *Westöstlicher 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 included.
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 included. Ms. Komar, Mr. Nehring

260. Seminar in the Modern Period. Seminar on a selected genre, author or theme of 20-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 will be analyzed and placed in the context of literary, cultural and political trends. Mr. Stephan

262. Seminar in Germanic Folklore. Detailed research on individual aspects of Germanic folklore. The topic selected will generally be 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 on literary theories such as *Rezeptionsästhetik* Neo-Marxist criticism, New Criticism, psychology or sociology of literature, structuralism, semiology and hermeneutics. Mr. Bahr, Mr. Bäuml

Professional Courses in Teaching Methods

370. The Teaching of German in Secondary Schools. Lecture, three hours per week and discussion periods. Prerequisite: Graduate Standing or consent of instructor. Required of all candidates for the general secondary credential in German.

495A-495B. Preparation for College Teaching of German. (½ course each) Two-quarter sequence. Study of problems and methods in teaching German on the college level. Theory and classroom practice, observation and critical evaluation. Credit only on completion of 495B. May not be used to fulfill any of the course requirements for the Master's Degree. This course is offered on an In-Progress basis, which requires students to complete the full 2-quarter sequence at the end of which time a grade is given for all quarters of work. S/U grading. Mr. Jedan

Individual Study and Research

596. Directed Individual Study or Research. To be arranged with the member of the faculty who will direct the study or research. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken twice. Only one course in the 500 series may count toward the M.A. requirement.

597. Preparation for Comprehensive Examination for the Masters Degree or the Qualifying Examination for the Ph.D. To be arranged with the member of the faculty who will direct the study. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken only once before and only once after the M.A. degree. Only one course in the 500 series may count toward the M.A. graduate course requirement.

598. Research for Preparation of Master's Thesis. To be arranged with the member of the faculty who will direct the study. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken three times. Only one course in the 500 series may count toward the M.A. graduate course requirement.

599. Research for Preparation of the Doctoral Dissertation. (1 to 2 courses) To be graded on S/U basis. May be taken unlimited number of times. To be arranged with the member of the faculty who will direct the study. Each faculty member has his own doctoral research course identified by a two-letter code using his initials.

Dutch-Flemish and Afrikaans

120. Introduction to Dutch Studies.

131. Introduction to Modern Dutch Literature.

135. Introduction to Afrikaans Literature.

199. Special Studies in Dutch-Flemish and Afrikaans. (½ to 1 course)

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. This course is equivalent to Linguistics 225. Mr. Kirsner

596. Directed Individual Study or Research in Dutch-Flemish and Afrikaans. To be arranged with the member of the faculty who will direct the study or research. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken twice. Mr. Kirsner

Hungarian

120A-120B. Readings in Hungarian.
120C. Readings in Hungarian Literature.
121A-121B. Survey of Hungarian Literature in Translation.
130. Hungarian Civilization and Culture.
M135. Hungarian Folklore and Mythology.
M136. Folklore and Mythology of the Ugric Peoples.
199. Special Studies in Hungarian. (½ to 1 course)

Old Norse and Medieval Scandinavian

221. Advanced Old Norse Prose. Prerequisites: course 152 or equivalent. Readings of major saga texts. Also read are secondary sources which bear on specific issues in Old Norse literature and medieval Scandinavian history. Mr. Byock

222. Advanced Old Norse Poetry. Prerequisites: course 152 or equivalent. Readings of mythological and heroic poems from the *Poetic Edda*. Secondary sources used where appropriate. Mr. Byock

245A. Germanic and Scandinavian Mythology. 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 the member of the faculty who will direct the study or research. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken twice. Only one course in the 500 series may count toward the M.A. requirement. Mr. Byock

Yiddish

121C. Special Topics in Yiddish Literature in English Translation.
131A. Modern Yiddish Poetry.
131B. Modern Yiddish Prose and Drama.
131C. Special Topics in Yiddish Literature.
199. Special Studies in Yiddish. (½ to 1 course)
596. Directed Individual Study or Research in Yiddish. To be arranged with the member of the faculty who will direct the study or research. The member of the faculty directing the study will be identified by a two-letter code using the initials of the sponsoring instructor (see department for code). To be graded on S/U basis. May be taken twice. Ms. Hadda

Scandinavian Section

(Department of Germanic Languages)

Ross P. Shideler, Ph.D., *Professor of Scandinavian Languages and Comparative Literature.*
Kenneth G. Chapman, Ph.D., *Emeritus Professor of Scandinavian Languages.*
Erik Wahlgren, Ph.D., *Emeritus Professor of Scandinavian and Germanic Languages.*
James R. Massengale, Ph.D., *Associate Professor of Scandinavian Languages.*
Mary Kay Norseng, Ph.D., *Associate Professor of Scandinavian Languages (Vice Chair of the Department).*

•

Inkeri A. Rank, M.A., M.Ed., *Visiting Lecturer in Finnish Studies.*
Juels L. Zentner, Ph.D., *Adjunct Lecturer in Scandinavian Languages.*

The Master of Arts Degree in Scandinavian

Admission Requirements. In addition to the University minimum requirements, prospective students in the M.A. program in Scandinavian Languages must have an undergraduate major in Scandinavian, or the equivalent. If the candidate is deficient in the undergraduate major, he or she 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 of entering graduate students.

Three letters of recommendation are required by the Graduate Division.

Write to the Scandinavian Section, Department of Germanic Languages, UCLA, Los Angeles, California 90024 for a brochure describing the program and requirements. No special application form is required, other than that issued by the Graduate Division.

Advising. Graduate Adviser: A member of the Scandinavian Section, Royce Hall 332, Telephone: (213) 825-2432.

Students in the M.A. program in Scandinavian should meet with the Graduate Adviser each quarter. Through these meetings, the Graduate Adviser keeps both the students and the other members of the Section informed of their progress. The adviser keeps records of these interviews, whenever deemed necessary, in the student's file. There are no Section guidance committees for M.A. candidates.

Admission to Master's Program. This is synonymous with graduate admission. Specific courses are required only in cases where entering graduate students have deficiencies in their undergraduate preparation.

Major Fields or Subdisciplines. There are no clear major fields or subdisciplines in the M.A. program in Scandinavian, but students emphasize one modern language and literature area in Danish, Norwegian or Swedish.

Foreign Language Requirement. A reading knowledge of French or German is required (in addition, of course, to a knowledge of the Scandinavian languages). Students must pass the GSFLT (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 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 in Scandinavian. At least one of these three courses in a related field must be on the graduate level. Comparative Literature 200 or an equivalent course in methodology is required as one of the 12 required courses.

Thesis Plan. There is no thesis plan in the M.A. program in Scandinavian.

Comprehensive Examination Plan. A Comprehensive Examination, based on the required coursework and a reading list, will be required of all candidates for the M.A. degree in Scandinavian. The examination is given whenever the candidate has completed the course requirements and feels prepared to be examined on both the coursework and the reading list.

The Scandinavian Section as a whole serves as the comprehensive examination committee. All members of the Section in residence participate in the conducting of the examination, which is both written and oral. Students who fail the Comprehensive Examination may be reexamined once without petitioning.

Time to Degree. For a full-time student with no deficiencies upon admission to graduate status, completion of coursework and examinations for the M.A. in Scandinavian usually requires six quarters of standard courseload.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Taken
596	4	S/U	Three*

Disqualification. Specific conditions which may lead to termination of graduate status are: failure to maintain a B average; C work in Scandinavian courses; or failing the M.A. written or oral examination. A final decision about dismissal is made by the Scandinavian faculty in residence.

Appeals. Students may appeal such a decision by submitting to the Vice Chair a petition outlining any extraordinary circumstances.

For the Ph.D. degree in Germanic Languages with Scandinavian Literature as a Major or Minor Field, see the Doctoral Degree Program in Germanic Languages.

**Graduate Courses

C251. Henrik Ibsen. Prerequisite: an advanced knowledge of Norwegian and consent of instructor. Intensive study of the works of Ibsen. May be concurrently scheduled with C144. Ms. Norseng

*Three 596 courses (12 units) may apply toward the total course requirement, but only one (4 units) may apply toward the minimum graduate course requirement.

**For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

C252. August Strindberg. Prerequisites: an advanced knowledge of Swedish and consent of instructor. Intensive study of the work of August Strindberg. May be concurrently scheduled with C145.
Mr. Massengale, Mr. Shideler

C253. Søren Kierkegaard. Prerequisites: an advanced knowledge of Danish and consent of instructor. Intensive study of the works of Kierkegaard. May be concurrently scheduled with C146.
Mr. Massengale

C254. Knut Hamsun. Prerequisites: an advanced knowledge of Norwegian and consent of instructor. Intensive study of the works of Hamsun. May be concurrently scheduled with C147. Mr. Norseng

C263. Seminar in Scandinavian Studies. Prerequisite: Graduate Standing or permission of instructor. Knowledge of a Scandinavian language is required. Intensive study of selected aspects of Scandinavian society based on readings in the literature as well as other documentary material. Course may be taken more than once if the Graduate Adviser determines that the course content is significantly different. May be concurrently scheduled with C180.

C264. The Theory of the Scandinavian Novel. This course examines the predominant structures of the novel, the Scandinavian novel in particular, starting with its beginnings in the Icelandic saga, concentrating on the rise of the novel in the 19th century, and following the novel's evolution in the 20th century. The works of such writers as Søren Kierkegaard, H.C. Andersen, J.L. Almquist, J.P. Jacobsen, Knut Hamsun, Martin A. Hansen are central to the course. Discussion focuses on the "Bildungsroman" and the reaction that set in against it. The emphasis of the course is a theoretical one, exploring approaches that can be taken to these works of fiction. May be concurrently scheduled with Scandinavian C182.

Individual Study and Research

597. Preparation for the Qualifying Examination for the Ph.D. (1 to 2 courses) To be arranged with the member of the faculty who will direct the study or research. To be graded on S/U basis. May be taken three times.

599. Research for Preparation of the Doctoral Dissertation. To be arranged with the member of the faculty who will direct the study. To be graded on S/U basis. May be taken unlimited number of times.

History

(Office, 6265 Bunche Hall)

Joyce Appleby, Ph.D., *Professor of History.*
Robert L. Benson, Ph.D., *Professor of History.*
Kees W. Bolle, Ph.D., *Professor of History.*
E. Bradford Burns, Ph.D., *Professor of History.*
Robert I. Burns, S.J., Ph.D., *Professor of History.*
Robert N. Burr, Ph.D., *Professor of History.*
Mortimer H. Chambers, Jr., Ph.D., *Professor of History.*
Claus-Peter Clasen, Ph.D., *Professor of History.*
Stanley Coben, Ph.D., *Professor of History.*
Robert Dallek, Ph.D., *Professor of History.*
Christopher Ehret, Ph.D., *Professor of History.*
Amos Funkenstein, Ph.D., *Professor of History.*
John S. Galbraith, Ph.D., *Professor of History.*
Frank O. Gatell, Ph.D., *Professor of History.*
Juan Gómez-Quiñones, Ph.D., *Professor of History.*
Richard Hovannisian, Ph.D., *Professor of History.*
Daniel W. Howe, Ph.D., *Professor of History (Vice-Chair of the Department).*
Norris C. Hundley, Ph.D., *Professor of History.*
Michael O. Jones, Ph.D., *Professor of History.*
Nikki Keddie, Ph.D., *Professor of History.*
Barisa Krekic, Ph.D., *Professor of History.*
John H.M. Laslett, D.Phil., *Professor of History.*
James Lockhart, Ph.D., *Professor of History.*
Peter Loewenberg, Ph.D., *Professor of History.*
Andrew Lossky, Ph.D., *Professor of History.*
Afaf Marsot, D.Phil., *Professor of History.*
Lauro R. Martines, Ph.D., *Professor of History.*
Gary B. Nash, Ph.D., *Professor of History.*
Boniface I. Obichere, D. Phil., *Professor of History.*
Merrick Posnansky, Ph.D., *Professor of History.*
Hans J. Rogger, Ph.D., *Professor of History (Chair of the Department).*
Richard H. Rouse, Ph.D., *Professor of History.*
Damodar R. SarDesai, Ph.D., *Professor of History.*
Alexander P. Saxton, Ph.D., *Professor of History.*
Stanford J. Shaw, Ph.D., *Professor of History.*
Kathryn Kish Sklar, Ph.D., *Professor of History.*
Speros Vryonis, Jr., Ph.D., *Professor of History.*
Eugen Weber, M.Litt., *Professor of History.*
Robert S. Westman, Ph.D., *Professor of History.*
James W. Wilkie, Ph.D., *Professor of History.*
Robert Wohl, Ph.D., *Professor of History.*
Stanley A. Wolpert, Ph.D., *Professor of History.*
Milton Anastos, Ph.D., *Emeritus Professor of Byzantine Greek and History.*
Eugene N. Anderson, Ph.D., *Emeritus Professor of History.*
Truesdell S. Brown, Ph.D., *Emeritus Professor of History.*
John J. Burke, Ph.D., *Emeritus Professor of History.*
John W. Caughey, Ph.D., *Emeritus Professor of History.*
Raymond H. Fisher, Ph.D., *Emeritus Professor of History.*
Yu-Shan Han, Ph.D., *Emeritus Professor of History.*
Jere C. King, Ph.D., *Emeritus Professor of History.*
Gerhart B. Ladner, Ph.D., *Emeritus Professor of History.*
Lynn White, Jr., Ph.D., *Emeritus Professor of History (University Professor).*
Robert A. Wilson, Ph.D., *Emeritus Professor of History.*
Edward A. Alpers, Ph.D., *Associate Professor of History.*
Robert P. Brenner, Ph.D., *Associate Professor of History.*
David M. Farquhar, Ph.D., *Associate Professor of History.*
Thomas S. Hines, Ph.D., *Associate Professor of History.*
Philip C. Huang, Ph.D., *Associate Professor of History.*
Temma Kaplan, Ph.D., *Associate Professor of History.*
Ronald J. Mellor, Ph.D., *Associate Professor of History.*
Eric H. Monkkonen, Ph.D., *Associate Professor of History.*
Michael G. Morony, Ph.D., *Associate Professor of History.*
Fred G. Notehelfer, Ph.D., *Associate Professor of History.*
Peter H. Reill, Ph.D., *Associate Professor of History.*
Geoffrey W. Symcox, Ph.D., *Associate Professor of History.*
Richard Weiss, Ph.D., *Associate Professor of History.*
M. Norton Wise, Ph.D., *Associate Professor of History.*
Mary A. Yeager, Ph.D., *Associate Professor of History.*
Edward Berenson, Ph.D., *Assistant Professor of History.*
Margaret W. Creel, Ph.D., *Assistant Professor of History.*
Robert A. Hill, M.Sc., *Assistant Professor of History.*
Kenneth M. Morrison, Ph.D., *Assistant Professor of History.*
Deborah Silverman, M.A., *Acting Assistant Professor of History.*

•

Kendall Bailes, Ph.D., *Professor of History at U.C. Irvine.*
Amin Banani, Ph.D., *Professor of Persian and History.*
Giorgio Buccellati, Ph.D., *Professor of History and Near Eastern Languages.*
Robert G. Frank, Ph.D., *Associate Professor of History and Medical History/Anatomy.*
Albert Hoxie, M.A., *Senior Lecturer in History.*
Ludwig Lauerhass, Ph.D., *Lecturer in History and Librarian.*

The Master of Arts Degree

Admission Requirements. For admission to graduate status in the Department of History, a student 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 plus average for upper division work. The applicant must have three letters of recommendation and the scores of the Aptitude Test of the Graduate Record Examination submitted to the Department (Note: the United States field requires GRE scores on both the Aptitude and Advanced Tests). Students not meeting the grade average requirements may be admitted in exceptional cases if their letters of recommendation, their Graduate Record Examination scores, or other factors indicate unusual promise. 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 program. Applicants with a year or more of graduate study at other institutions should have attained a grade point average of 3.50 or better (on a 4.0 scale) if they wish to work toward the Ph.D. degree. Admission to the Department depends upon the number of openings in the field in which the applicant expects to specialize. 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. The Department has no separate application form, but uses the general University form distributed by the Graduate Admissions Office. Departmental information may be obtained by writing to Mrs. Barbara Kelley, Graduate Adviser.

There is no screening examination. Non-history majors may be required to take specified courses, depending upon their background and fields of specialization. A student is expected to work in the field for which he/she was admitted. A change of fields after admission requires the approval of the relevant Admissions Committee.

Advising. Address: Mrs. Barbara Kelley, Graduate Office — Department of History, 6273 Bunche Hall.

A *Guide to Graduate Study in History* which explains the requirements and procedures of the History graduate program is mailed to all new graduate students who have filed an "Intent to Register" (prior to registration). The Guide lists all faculty, their major publications and descriptions of courses offered during the year.

During registration week, an orientation program is held for entering graduate students. The requirements for degrees and criteria, standards and procedures regarding progress toward the degrees are discussed.

The Graduate Adviser is available for consultation regarding University and Departmental requirements and procedures for advanced degrees. Students are advised to consult faculty within their respective fields for more specific academic counseling. Each quarter the Graduate Adviser approves the study list for each student, but responsibility for planning a program to satisfy degree requirements rests with the student.

Students are encouraged to read the course evaluations submitted by faculty each quarter. These evaluations appraise the student's coursework and are indicators of the student's progress and status. Each Spring Quarter, the Graduate Guidance Committee conducts a review of the progress of all graduate students and writes letters to the students with academic problems or deficiences.

Major Fields or Subdisciplines. The Comprehensive Examination covers one of the following fields:

1. Ancient (also includes Ancient Near East).
2. Medieval (also includes Byzantine and Medieval Jewish History).
3. Europe, 1550-present (also includes British History and the British Empire).
4. Africa.
5. Near East (includes candidates with emphasis on 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 the approval of the faculty in these fields may petition the Graduate Guidance Committee for an M.A. examination in their field of specialization.

Foreign Language Requirement. A reading knowledge of any foreign language approved by the Department is required. It is recommended that this requirement be met by the second quarter of graduate work. A score of 500 on the GSFLT for French, German, Russian or Spanish is required. For other languages, certification is required by the department teaching the language according to that department's standards. Students of United States and African History may use departmentally administered translation examinations in French, Spanish, or German in place of the Educational Testing Service Graduate School Foreign Language Tests. Students of European History must satisfy foreign language requirements by passing departmentally administered examinations.

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 counted toward this requirement and only one in the 500 series. For students in United States History, a minimum of seven of the nine courses must be at the 200 level, including at least one 2-quarter seminar and History 245. Students in European History must include History 225, and Africanists must take History 275.

Thesis or Comprehensive Examination Plan. The Department follows the Comprehensive Examination Plan (see "Thesis or Comprehensive Examination" in *DEGREES AND REQUIREMENTS* section of the Catalog). Individual fields specify fulfillment of the examination requirement by one of the following (1) a 3-hour written examination designed to assess the candidate's 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 the candidate's 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 2-quarter research seminar in United States History.

In the Spring Quarter of each academic year each field meets to determine which of the Comprehensive Examination options it wishes to adopt for the following academic year. In consultation with the faculty in each field, the Chair of the Department then appoints a field M.A. committee, which consists of at least three faculty members, to administer the Comprehensive Examination for that year.

Field examiners administer the M.A. Comprehensive Examinations in November, March and May of each academic year, considering the candidate's examination in relation to course evaluations filed by professors for all graduate courses taken by the candidate. To complete the examination file, an evaluation of the candidate's potential must be forwarded to the Field Examining Committee by the professor whom the candidate would like to become chair of the doctoral committee. 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 with "Pass Subject to Reevaluation", the field M.A. committee will conduct a special reevaluation of the candidate's progress after not more than an additional three quarters of study.

Only in exceptional cases are oral examinations required for the M.A. degree.

Time to Degree. Completion of the master's degree at UCLA is designed to meet requirements for admission to the Department's doctoral program. Students are advised to pace their master's degree over a 2-year period, completing requirements within six quarters of full-time study. The Department will recommend to the Dean of the Graduate Division that students who do not complete the master's degree in six quarters be dropped from departmental rolls automatically unless upon petition the Graduate Guidance Committee grants an extension of time.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Time May Be Repeated
596	2-8	S/U	No limit
597	2-8	S/U	No limit

Only one 500 series course may be included toward both the 9-course total course requirement and towards the minimum 6-graduate (200 series) course requirement. This could be either 4 units of 596 or 4 units of 597.

Disqualification. A student may be dismissed at the end of the first year of graduate work if the Graduate Guidance Committee determines (after consultation with faculty in the student's field of study) that the student does not have the academic qualifications for successfully completing an advanced degree. If a student falls below a 3.0 average because of incomplete grades which lapse to F, the student is given an opportunity to remove the F(s) within a specified period before any action for dismissal is taken.

Appeals. A student may appeal any action taken by the Graduate Guidance Committee by presenting his/her case to the Department's Advisory Committee. If evidence is presented which results in a favorable decision for the student's continuation to the Ph.D., the student may then complete the requirements for the M.A. degree and continuation to the Ph.D., contingent upon the results of the M.A. Comprehensive Examination. Graduate students are rarely dismissed prior to taking the M.A. Comprehensive Examination, but a small percentage of students do receive a "terminal M.A.". This decision, which is made by the M.A. field committee, may be appealed to the Graduate Guidance Committee. If the student who receives a "terminal M.A." wants to continue to the Ph.D. and can find a faculty member willing to sponsor him/her in a doctoral program, the student may be given a year of probationary status to demonstrate his/her ability to proceed to the Ph.D. degree.

Students who fail to proceed according to "normal progress" stipulations are subject to dismissal, but every opportunity is given a student to petition for extensions of time limitations if extenuating circumstances prevent his/her meeting specified deadlines.

Other Relevant Information. No field work or internship is required for the M.A. A departmental brochure describing the graduate History program in some detail is available in the Graduate Adviser's Office (6273 Bunche Hall) to any interested student.

A concurrent master's program with the Graduate School of Library and Information Science has been approved. Students who wish to receive the M.A. in History and the M.L.S. in three years may apply for this program. Applications for admission will be reviewed by com-

mittees in the Department of History and the Graduate School of Library and Information Science, and a course of study for the program will be published in the near future. Further information may be obtained by writing to the Department of History or the Graduate School of Library and Information Science.

The Ph.D. Degree

Admission Requirements. 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 History 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, the following evaluation procedures determine a student's continuance to the Ph.D. degree.

For the student who enters the graduate program with only a B.A. degree, an evaluation comparable to the M.A. Comprehensive Examination must occur within the period of six quarters.

For the student who enters with a master's degree from another department, evaluation must be completed by the end of three quarters of study in the History Department in order to determine whether or not he/she will be permitted to continue toward the Ph.D. This evaluation will be conducted in the same manner as described under the M.A. program, except that for some candidates the written examination may be waived at the discretion of the field examination committee.

All candidates must present to the Graduate Guidance Committee a field approval form signed by the faculty member who has agreed to sponsor his/her work for the Ph.D. according to the following schedule; by the end of the seventh quarter or earlier for students entering with only a B.A.; and by the end of the third quarter or earlier for students entering with an M.A. from another department. For a description of fields for the Ph.D. degree, see "Written and Oral Qualifying Examinations" below. Students who do not meet time limits for proceeding to the Ph.D. will be dropped from the departmental rolls automatically, unless the Graduate Guidance Committee extends their time limits by petition.

Advising. Address: Mrs. Barbara Kelley, Graduate Adviser, Department of History, 6273 Bunche Hall.

A *Guide to Graduate Study in History* which explains the requirements and procedures of the History graduate program is mailed to all new graduate students who have filed an "intent to Register" (prior to registration). The Guide lists all faculty with their major publications and descriptions of courses offered during the year.

During registration week, an orientation program is held for entering graduate students. The requirements for degrees, criteria, and standards and procedures regarding progress toward the degrees are discussed.

For academic counseling, a student chooses a faculty sponsor who chairs the doctoral committee and guides the student in his/her Ph.D. program.

There is a Graduate Guidance Committee consisting of five faculty members and one graduate student appointed by the Chair of the Department, which reviews and makes recommendations regarding all doctoral programs and any petitions requesting variations from the program as described in the catalog. The Graduate Adviser is an ex officio member of this committee and channels all petitions and programs for review to the Graduate Guidance Committee. The student's chair is normally consulted about petitions and variances.

At the end of each quarter, course evaluations are written by professors for each graduate student. Students are asked to read these evaluations in the Graduate Office where they may discuss the evaluations if there are questions.

An annual review of all graduate students is made each Spring Quarter by the Graduate Guidance Committee. Letters are written to those students with program or gradepoint deficiencies.

Students are encouraged to consult the Graduate Adviser, a full-time staff member, about requirements and procedures for progress towards the Ph.D. degree. The Graduate Adviser approves study lists at the beginning of each quarter.

Major Fields or Subdisciplines. Ancient Greece; Ancient Rome; Medieval Constitutional and Legal; Medieval Social and Economic; Medieval Ecclesiastical and Religious; Medieval Intellectual and Cultural; 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 Socio-Economic 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; 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 chosen from the following: Afro-American, American Diplomatic, American West, American Indian, California, Ante-Bellum and 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 (1) or (2) or both may be chosen as minor fields for the Ph.D.

In addition to the European fields listed above, a program in European Intellectual and Cultural History may be offered. Candidates working toward a doctorate in this program offer fields in: (1) the socio-political history of Modern Europe, (2) intellectual history, (3) one other area of study (such as medieval, ancient, or a given national history, etc.), and normally, (4) one field in some discipline outside the Department such as philosophy, literary criticism, psychology, linguistics, sociology of knowledge or art history. Students working in the earlier period (16th-18th centuries) must demonstrate minimal competency in Latin as well as in two modern European languages.

Candidates offering a field in Comparative History as a fourth field for the Ph.D. degree should choose a topic for comparison which would usually, but not necessarily, coincide with time-area spans of the other three fields defined for Ph.D. Qualifying Examinations. Each candidate offering a field in Comparative History will be required to submit a special written statement defining his or her particular field of study which must be approved by the candidate's proposed doctoral committee before petitioning the Graduate Guidance Committee for approval of the doctoral committee and four fields of examination.

Candidates in the history of science program must select three of the above fields and either the history of medicine or an allied field referred to below. The candidates must also demonstrate a detailed knowledge of the substance and historical development of a particular science, or of a type of engineering or technology, as a subfield common to the historical fields.

Foreign Language Requirement. A reading knowledge of the languages prescribed below for the major fields is required. If only two languages are prescribed, the student will display his/her competence in them by passing examinations administered by the Educational Testing Service (a score of 500 on the GSFLT for French, German, Russian and Spanish) or the appropriate language department. For a third or fourth language, evidence of competence satisfactory to the chair of the doctoral committee will be considered acceptable.

Every student is urged, when possible and practical, to take a Graduate School Foreign Language Test before entering the Department's graduate program as an effort toward fulfilling the foreign language requirements as quickly as possible. No Oral Qualifying Examination for the Ph.D. may be scheduled until the student has passed an examination, in at least

two foreign languages, except for students in United States History, where only one foreign language is required. Students of United States and African History may use departmentally administered translation examinations in French, Spanish, or German in place of the Educational Testing Service Graduate School Foreign Language Tests. Students of European History must satisfy foreign language requirements by passing departmentally administered examinations.

1. African History. French and at least one other European or African language needed for the student's research and approved by the chair of the Ph.D. committee.

2. Ancient History. French, German, Latin and Greek.

3. Ancient Near East, French, German and two ancient languages, one of which should be either Akkadian, Egyptian or Hebrew. The other ancient language may be Sumerian, Hittite, Ugaritic, Phoenician, Aramaic, Greek or Latin, depending on individual programs. It is expected that the ancient languages, with all attendant problems of philological and textual criticism, will normally constitute the fourth field of the doctoral examination.

4. Armenian History. Armenian, French, and an additional language or languages deemed necessary for the research to be undertaken. Students specializing in the Ancient and Medieval periods will be encouraged to prepare in Greek and/or Latin, while students specializing in the Modern period will be encouraged to prepare in Turkish and/or Russian.

5. Asian History. (a) India: three languages chosen from the following: French and/or German, Dutch or Portuguese, plus Hindi and/or one classical or modern regional language of India; (b) East Asia: 1) for the M.A. degree: two years of Chinese or Japanese, or one European language certified by a GSFLT score of 500 or better; 2) for the Ph.D. degree in Chinese history: French or German or Russian plus Chinese and Japanese; for the Ph.D. degree in Japanese history: French and either German or Dutch plus Japanese. Admission to candidacy for the Ph.D. in the Chinese and Japanese fields requires the completion of a research seminar in the major field. Students are advised that successful completion of this seminar usually requires the equivalent of at least four years of superior college level language work in Chinese or Japanese.

6. British History. French and German, with the possibility of substitution.

7. European History (Modern) and History of Science. Either French or German and a language needed by the student in his/her research and approved by the Graduate Guidance Committee. Proficiency in foreign languages is to be determined by a departmentally administered examination.

8. Jewish History. Hebrew plus another European language or Arabic.

9. Latin American History. Two of the following: Spanish, Portuguese or special methodological studies.

10. Medieval History. French and German for all candidates; in addition, Greek for those specializing in Byzantine history and Latin for those specializing in western medieval history. Students are expected to have French or German at the beginning of their graduate studies.

11. Near Eastern History. Two Western and one Near Eastern languages, to be selected on the basis of the candidate's specialization. The two Western languages will generally be French and German, but Russian may be substituted for one of those in certain cases. Competence in all three foreign languages must be proven by passing examinations administered by the relevant department or GSFLT.

12. History of Religions. French and German plus (in most cases) a classical or ancient language in the religious tradition of the specialization.

13. Russian History. Russian and German as well as French or another language deemed necessary by the instructor for the candidate's research.

14. Southeast Asia. Two languages; one chosen from the following: French, Dutch or Spanish and one of the languages of the area.

15. United States History. One modern foreign language to be fulfilled through a departmentally-administered reading exam or a score of 500 on the GSFLT.

Except in the fields of African, Asian, British and United States History, reading knowledge of an appropriate language is usually required for admission to all graduate seminars.

Course Requirements. A candidate for the degree of Doctor of Philosophy in history must meet (a) the *Special Requirements for Admission to the Doctoral Program* listed above; and (b) the general requirements set forth under the Graduate Division. Attention is directed to the requirement that a program, extending over the full time of study, must be approved by the Department. A command of good English, spoken and written, the ability to read at least two foreign languages (except for the field of United States History where only one foreign language is required), and an acquaintance with general history are expected of all candidates. The candidate is required to complete at least one continuing 2- or 3-quarter seminar or, alternatively, a continuing sequence of at least two graduate courses approved by the Graduate Guidance Committee. This seminar or its alternative must include completion of 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), the candidate must take the course(s) for a letter grade. Students of United States History should complete History 245 and in addition to the seminar should write a dissertation prospectus (which could be written for credit as a History 596 or 597) expected to contain: a) a full statement of the dissertation topic; b) an historiographical discussion of the literature bearing on the topic; c) a statement of the methodology to be employed; and d) a survey of the sources sufficient to demonstrate the viability of the topic. The prospectus must be submitted in writing and approved by the dissertation adviser prior to the oral part of the Qualifying Examinations. After approval, copies will be given to each member of the examining committee. Students of European History must complete History 225 and students of African History must complete 275 unless exempted by special petition. Faculty serving on doctoral committees may require such courses as they deem necessary for preparation for Qualifying Examinations. 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. Candidates should, however, be able to demonstrate ability to give instruction in their fields.

Written and Oral Qualifying Examinations. Before admission to candidacy, students must pass oral and written examinations. In these examinations, students are expected to show not only a mastery of their special subject but also an adequate grasp of the wider field of historical knowledge and an ability to correlate historical data and to explain their significance. These examinations are designed to test not merely factual knowledge but also powers of historical analysis and synthesis, critical ability, and capacity for reflective thinking. A knowledge of the history of any area includes a reasonable knowledge of its historiography and bibliography; of its geography; and of its political, cultural, economic, and other historical aspects.

In the oral examination the candidate is to be examined in four fields, one of which may be an approved field in anthropology, economics, geography, language and literature, philosophy, political science, or other allied subjects. This allied field must be comparable in size and scope to the history fields listed above. The candidate should select the fields in consultation with his/her faculty sponsor and must receive the Department's approval of all four fields not less than six months before the Written Qualifying Examination is taken. To obtain this approval, the student should supply the Graduate Guidance Committee with the name of the faculty member who has agreed to serve as the sponsor of the doctoral work and with the details of the proposed program. A full-time graduate student must begin the Written Qualifying Examinations not later than the end of the ninth quarter of graduate work. (See *Time to Degree* listed below.)

The Written Qualifying Examination includes the major field only. The oral examination will

cover all four fields and will normally be held shortly after the written examination, but at the discretion of the doctoral committee it may be held as late as six months after the written examination. Both the written and oral examinations are to be considered by the committee as a whole in arriving at a judgment of the student's performance. The Written Qualifying Examination is normally prepared and administered by the chair of the student's doctoral committee and read by the entire committee before the Oral Qualifying Examination.

The Written Qualifying Examination must be passed before the Oral Qualifying Examination can be taken. The members of the doctoral committee determine whether or not an examination may be repeated (normally only once), based on their prognosis of the candidate's potential for successfully completing both the written and oral examinations within a specified period of time to be designated by the doctoral committee, but not to exceed one calendar year.

For students in United States History, the written Ph.D. examination will be administered twice a year, in May and November, and will be composed of questions solicited from faculty in the entire field of United States History. A committee of three faculty members in United States History will make up and read the examinations for all students taking the examination during the academic year. The examination is intended to test a comprehensive, broad understanding of American history both before and after the independence of the United States. All facets of history (political, social, diplomatic, etc.) are included. An ability to synthesize factual information, sometimes across long chronological periods, is consequently essential. Knowledge of the scholarly literature and of the principal historiographical controversies arising out of it are tested along with the examinee's own interpretive capabilities. Passing of the examination implies that the examinee is qualified, in the judgment of the United States Field, to teach courses in United States History at the college level. Questions relating to the planning of such courses may appear on the examination. The written examination, if failed, must be retaken at the next administration of the examination; if a student fails the oral examination he/she must retake it at a time specified by the doctoral committee but not to exceed six months. Any variance from these time limits must be approved by the American Field before going to the Graduate Guidance Committee for final approval.

Doctoral Committee. Constitution of doctoral committees conforms to the Graduate Council specifications.

Final Oral Examination Following Completion of the Dissertation. If required by the qualifying examination committee, a Final Oral Examination will be conducted upon completion of the dissertation to cover the field within which the dissertation falls. The candidates will be expected to show a mastery of their special fields, and such an acquaintance with the literature, general and special, bearing on them as would qualify them to give instruction to mature students. 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.

Time to Degree. Normal progress toward the Ph.D. has been established as follows:

A. From admission to graduate status to evaluation for continuance to Ph.D.:

1. For students entering with only the B.A. degree, six quarters maximum (including award of the M.A.).

2. For students entering with M.A. from another department, three quarters maximum.

B. From graduate admission to the Written and Oral Qualifying Examinations, maximum nine quarters.

C. From Qualifying Examinations (and approval of dissertation prospectus) to submission of dissertation and award of degree, 12 quarters.

D. From graduate admission to award of degree, 18 quarters for United States, Modern Europe, England, British Empire, Science and Psychohistory, and 21 quarters for Ancient, Ancient Near East, Medieval (including Byzantine), Asian, African, Latin American, Near Eastern, Jewish, Russian and History of Religions.

Candidate in Philosophy Degree. Students are eligible for the Candidate in Philosophy degree on advancement to candidacy for the Ph.D.

Disqualification and Appeal of Disqualification. The disqualification and appeal procedure for the Ph.D. up to the Qualifying Examinations is the same as for the M.A. degree.

A Ph.D. candidate is expected to complete a dissertation within 18 quarters of the date of entry into the graduate program for United States, Modern Europe, England, British Empire, Science, and Psychohistory and within 21 quarters of the date of entry into the graduate program for all other fields. Candidates may be granted a 1-year extension of time upon petitioning the Graduate Guidance Committee and showing evidence that the dissertation can be completed within one additional year. Further extensions are considered on an individual basis, taking into consideration the extent and type of research required, availability of source material, and other sometimes personal factors which may cause delays. It is the student's responsibility to keep both his/her chair and the graduate office advised of progress (or lack thereof) and estimated completion dates. Students may be dropped from the program after 21 quarters if there has been no communication with the Department after the Oral Qualifying Examinations.

Students who fail to proceed according to "Normal Progress" stipulations (as defined above) are subject to dismissal, but every opportunity is given a student to petition for extensions of time limitations if extenuating circumstances prevent his/her meeting specified deadlines.

Other Relevant Information

Dissertation— Candidates are required to present a dissertation on a subject of their choice of such character as to show a thorough mastery of the sources of information, the ability to carry on independent research, and to communicate its results in good literary form. In lieu of the customary type of dissertation, a student may in certain cases edit, or translate and edit, some historical source. Such a project involves careful textual criticism, explanatory annotations, and an historical introduction clearly showing the contribution of the source to historical knowledge. The nature and topic of a dissertation may require field research. This is the case especially in fields such as Armenian/Near Eastern, African, Latin American, East Asian, and frequently European History.

A departmental brochure describing the graduate History program in some detail is available in the Graduate Adviser's Office (6273 Bunche Hall) to any interested student.

*Graduate Courses

Admission to all graduate courses is subject to the instructor's approval and to appropriate language qualifications. For multi-term courses, credit and grades will be given only on completion of the full seminar sequence, with IP grading until the last term unless otherwise noted. Topics courses and seminars may be repeated.

CONTENTS

200-203	General History
204-214	Near and Middle East
215-224	Ancient and Medieval
225-244	Europe
245-264	United States
265-274	Latin America
275-281	Africa
282-290	Asia
291-292	Jewish
293	Religion
295-297	Science
495-599	Individual Study and Research

200A-200U. Advanced Historiography. (Formerly numbered 230A-230T). A. Ancient Greece; B. Ancient Rome; C. Medieval; D. Early Modern Europe; E. Modern Europe; F. Russia/Eastern Europe; G. Britain; H. United States; I. Latin America; J. Near East; K. India; L. China; M. Japan; N. Africa; O. Science/Technology; P. History of Religions; Q. Theory of History; R. Jewish History; S. Armenia and the Caucasus; T. Southeast Asia; U. Psychohistory. May be repeated for credit.

M200V. Advanced Historiography — Afro-American. (Same as Afro-American Studies M200A). Advanced Historiography, Afro-American History. May be repeated for credit.

M200W. Advanced Historiography — American Indian Peoples. (Same as American Indian Studies M200A.)

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

200X. Advanced Historiography — Oral History. An introduction to the practice, method and theory of oral history. Mr. Grele

201A-201U. Topics in History. (Formerly numbered 240A-240T). A through U as for 200. A graduate course involving reading, lecturing, and discussion of selected topics. This course does not fulfill the seminar requirements for the Ph.D. degree. May be repeated for credit. When offered jointly with 197, undergraduates need instructor's consent to enroll.

202A-B. Seminar in Comparative Modern Economic History. Discussion, three hours. Prerequisite: graduate standing. This course will focus on the 19th and 20th centuries. It will deal with the study of problems of modern economics including such topics as industrialization, growth, demography, development, and economic change. Grading in progress. Ms. Yeager

203. Topics in Comparative History. (Formerly numbered 240Z). Prerequisite: consent of instructor. Course will be in the general format of the 201 (Topics) series. Possible topics that it might cover would be 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. (Formerly numbered 267A-267B). Methodology, socio-economic and political change in the Arab world. Ms. Marsot

205A-205B. Seminar in Medieval Middle Eastern History. (Formerly numbered 291A-291B). Mr. Morony

206A-206B. Seminar in the Social History of the Middle East. (Formerly numbered 284A-284B). 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 Languages and Cultures M250.) Prerequisites: consent of instructor. 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. (Formerly numbered 283A-283B). Mr. Shaw

211A-211B. Seminar in Armenian History. (Formerly numbered 286A-286B). Mr. Hovannisian

C212. Methods in Armenian Oral History. (Formerly numbered 228). 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. The course will include a project assignment in the field. May be concurrently scheduled with course C112D. Mr. Hovannisian

215A-215B. Seminar in Ancient History. (Formerly numbered 250A-250B). Mr. Chambers, Mr. Mellor

216A-216B. Seminar in Byzantine History. (Formerly numbered 252A-252B-252C). Mr. Vryonis

217. Sources and Handbooks of Medieval History. 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. (Formerly numbered 222A-222B). Prerequisites: reading knowledge of Latin and German or French recommended. 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. Prerequisites: 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. Offered in alternate years. Mr. Rouse

219B. Paleography II. Prerequisites: 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. Offered in alternate years. Mr. Rouse

220A-220B. Seminar in Church and Monarchy in the Middle Ages. (Formerly numbered 251A-251B). 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 century to the 14th. Mr. Benson

221A-221B. Seminar in Medieval History. (Formerly numbered 253A-253B). Mr. R.I. Burns

222A-222B. Seminar in Medieval Intellectual History and History of Science. (Formerly numbered 278A-278B). Selected problems from medieval and early modern philosophy, science, political theory, theology. Mr. Funkenstein

225. Colloquium for Entering Graduate Students in Modern European History. (Formerly numbered 216). Prerequisite: admission to graduate study in Modern European history. An introduction to the topics, methods, and historiography of Modern European history. Required of all graduate students in Modern European history.

226A-226B. Seminar in the Italian Renaissance. (Formerly numbered 254A-254B). Mr. Martines

227A-227B. Seminar in the Reformation. (Formerly numbered 255A-255B). Mr. Clasen

229A-229B. Seminar in Early Modern European History. (Formerly numbered 257A-257B). Mr. Lossky, Mr. Martines, Mr. Symcox

230A-230B. Seminar in Modern European History. (Formerly numbered 260A-260B). Mr. Loewenberg and Staff

231A-231B. Seminar in Modern European Intellectual and Cultural History. (Formerly numbered 261A-261B). Mr. Weber, Mr. Wohl

233A-233B. Seminar in Russian History. (Formerly numbered 263A-263B). Mr. Rogger

234A-234B. Seminar in the Modern History of Spain, Portugal, and Italy. (Formerly numbered 262A-262B). Ms. Kaplan, Mr. Wohl

239A-239B. Seminar in English History: Middle Ages. (Formerly numbered 258A-258B).

240A-240B. Seminar in English History: Modern History. (Formerly numbered 259A-259B).

244A-244B. Seminar in British Empire History. (Formerly numbered 264A-264B). Mr. Galbraith

245. Colloquium in U.S. History. (Formerly numbered 200H). 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. Normally limited to and required of all entering graduate students in U.S. history.

246A-246B-246C. Introduction to United States History. A graduate survey of the significant literature dealing with United States history from the colonial period to the present. Each quarter-course may be taken independently and a letter grade will be assigned.
246A. Colonial Period. Mr. Nash
246B. 1790-1900. Mr. Gatell, Mr. Howe, Mr. Saxton
246C. Twentieth Century. Mr. Coben, Mr. Dallek, Mr. Weiss

247A-247B. Seminar in Early American History. (Formerly numbered 269A-269B). Mr. Nash

249A-249B. Seminar in Jacksonian America. (Formerly numbered 275A-275B). Mr. Gatell

250A-250B. Seminar in United States History of the Middle Nineteenth Century. (Formerly numbered 272A-272B) Mr. Gatel, Mr. Howe

252A-252B. Seminar in Recent United States History to 1930. (Formerly numbered 270A-270B). Mr. Coben, Mr. Hines

253A-253B. Seminar in Recent United States History since 1930. (Formerly numbered 271A-271B). Mr. Hines, Mr. Weiss

254A-254B. Seminar in United States Social and/or Intellectual History. (Formerly numbered 273A-273B). Mr. Howe, Mr. Saxton

256A-256B. Seminar in American Diplomatic History. (Formerly numbered 276A-276B). Mr. Dallek

257A-257B. Seminar in United States Urban History. (Formerly numbered 285A-285B). Mr. Hines, Mr. Monkkonen

258A-258B. Seminar in Working Class History. (Formerly numbered 288A-288B). Mr. Laslett, Mr. Saxton

259A-259B. Seminar in Social History of Women in the U.S. (Formerly numbered 290A-290B). Ms. Sklar

260A-260B. Seminar in Native American History. (Formerly numbered 292A-292B). Mr. Morrison

261A-261B. Seminar in Afro-American History. (Formerly numbered 277A-277B). Social and political history of the Afro-American including an emphasis on the development and structure of race relations in America, and racial concepts and dilemmas, black and white. Ms. Creel, Mr. Hill

262A-262B. Seminar in Chicano History. (Formerly numbered 289A-289B). Mr. Gómez-Quiñones

263A-263B. Seminar in the History of the American West. (Formerly numbered 274A-274B). Mr. Hundley

M264. History of American Education. (Formerly numbered M215C). (Same as Education M201C). The aim is to depict the social forces impinging on American education from the 1860s to the present, and to analyze the relation between these social forces and the philosophy, curriculum, structural organization, and functions of education at all levels. Mr. S. Cohen

M265. Latin American Research Resources. (Formerly numbered M231). (Same as Latin American Studies M200, and Library and Information Science M225.) The course will acquaint students with general and specialized materials in fields concerned with Latin American Studies. Library research techniques will provide the experience and competency required for future bibliographic and research sophistication as the basis for enhanced research result. Mr. Lauerhass

266A-266B. Seminar in Colonial Latin American History. (Formerly numbered 266G-266H). Mr. Lockhart

267A-267B. Seminar in Latin American History: 19th and 20th Centuries. (Formerly numbered 266A-266B). Mr. Burr

266A-266B. Seminar in Recent Latin American History. (Formerly numbered 266E-266F). Prerequisite: course 167A or 167B or 171, or concurrent enrollment in same, or equivalent. Mr. Wilkie

275. Introduction to the Professional Study of African History. (Formerly numbered 212). Required of all entering graduate students in African History. Source identification, research methodologies, historiographical traditions, historical interpretation, and approaches to teaching are examined. Strongly recommended for History concentrators in M.A. African Studies Program.

276. African Archaeology-Field Techniques. (½ to 2 courses). (Formerly numbered 221A). 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. (½ to 2 courses). (Formerly numbered 221B). Course 276 (African Archaeology-Field Techniques) must be taken before or in conjunction. A field course to equip a student to handle finds from excavations. The course will involve analysis, description, illustration and interpretation of an actual archaeological and/or ethnographic collection. Mr. Posnansky

278A-278B. Seminar in African History. (Formerly numbered 265A-265B).

282A-282B-282C. Seminar in Chinese History. (Formerly numbered 279A-279B-279C). Mr. Farquhar, Mr. Huang

285A-285B. Seminar in Modern Japanese History. (Formerly numbered 281A-281B). Mr. Notehelfer

288A-288B. Seminar in South Asia. (Formerly numbered 280A-280B). Mr. Wolpert

289A-289B. Seminar in Southeast Asia. (Formerly numbered 280A-280B). Mr. SarDesai

291A-291B. Seminar in Jewish History. (Formerly numbered 268A-268B). 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. (Formerly numbered 282A-282B). Mr. Bolle

295. Theories of Scientific Change. (Formerly numbered 227). Prerequisite: consent of instructor. Historical and philosophical perspectives on science focusing upon 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. (Formerly numbered 256A-256B). Mr. Westman, Mr. Wise

Individual Study and Research

490. Writing Workshop for Graduate Students. 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, will help students improve their own writing. Offered on a satisfactory/unsatisfactory (S/U) grade basis only. May be repeated once. Ms. Strenski

495. The Teaching of History. Prerequisite: Graduate Standing; required of all new teaching assistants. Consisting of lectures, readings, discussions, and practice teaching sessions within the structure of a seminar; students receive unit credit toward full-time equivalence, but not towards the nine course requirement for the M.A. degree. Graded S/U.

501. Cooperative Program. (½ to 2 courses) Prerequisites: Approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus, instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Studies. (¼ to 2 courses) Prerequisites: Graduate Status, permission of instructor. Individual directed reading arranged with professor. M.A. candidates may take this course only once. Number of times doctoral candidates may take this course is subject to approval of Graduate Studies Committee. May be taken S/U or letter grade.

597. Directed Studies for Graduate Examinations. (¼ to 2 courses) Preparation for either the Master's Comprehensive Examination or the Ph.D. Qualifying Examinations.

599. Doctoral Research and Writing. (¼ to 2 courses) Open only to students who have passed the qualifying examination for the Ph.D. degree.

Indo-European Studies (Interdepartmental)

Raimo A. Anttila, Ph.D., *Professor of Indo-European and General Linguistics.*
Henrik Birnbaum, Ph.D., *Professor of Slavic Languages.*
Patrick K. Ford, Ph.D., *Professor of Celtic Studies (Chair of the IES Committee).*
Marija Gimbutas, Ph.D., *Professor of European Archaeology (Department of Slavic Languages).*
Bengt T. M. Löfstedt, Ph.D., *Professor of Classics.*
Jaan Puhvel, Ph.D., *Professor of Classics and Indo-European Studies.*
Hartmut Scharfe, Ph.D., *Professor of Indic Studies (Department of Oriental Languages).*
Hanns-Peter Schmidt, Ph.D., *Professor of Indo-Iranian Studies (Department of Near Eastern Languages).*
Donald J. Ward, Ph.D., *Professor of Folklore and German.*
Terence H. Wilbur, Ph.D., *Professor of Germanic Linguistics and Philology.*
Alan H. Timberlake, Ph.D., *Associate Professor of Slavic Languages.*
Joseph F. Nagy, Ph.D., *Assistant Professor of English.*

The Ph.D. Degree

Admission Requirements. Students admitted to graduate status must have an A.B. degree with a major in an Indo-European language field (e.g., German, Slavic, Celtic, Romance Languages, Latin, Greek), Linguistics (with concentration on historical and comparative linguistics), Anthropology, or Archaeology. Letters of recommendation (at least two, preferably three or four) are required; GSAT not required. Potential applicants may request a brochure by writing to: Indo-European Studies Program, c/o Folklore and Mythology Center, 1037 GSM — Library Wing, University of California, 405 Hilgard Avenue, 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, an applicant may be granted provisional admission and directed to remove those deficiencies in the initial period of enrollment.

Advising. The general Graduate Adviser is the Chair of the Interdepartmental Degree Committee; he/she may be contacted at the above address. When the student has determined clearly the area of specialization in which he or she will work (usually by the end of the first year), a personal adviser will be assigned. Should the student change the area of specialization, a different adviser may be assigned. Students are expected to be in close touch with their advisers regarding their progress in the program. When the student approaches the time for the doctoral examinations, a committee selected by the student in close consultation with the personal adviser will be nominated and formally appointed by the Dean of the Graduate Division.

Major Fields or Subdisciplines. The doctorate 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. During the first year of graduate study, the student is expected to absolve the standard reading examinations set by the Graduate Division (ETS) in any two of German, French, and Russian. The remaining language is to be passed in the second year, unless the student has demonstrated in some other way the ability to use the language as a research tool.

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, Homeric Greek, one upper division course in Latin, basic competence in Indo-European linguistics (including the introductory IES 150 and 210), mythology (e.g., Classics 168) and Archaeology (including IES 131, 132). Additional requirements by field as follows:

1) *Linguistics* — an advanced seminar in comparative grammar, a minimum of five 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 chosen in consultation with the student's personal 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 chosen in consultation with the student's personal 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 chosen in consultation with the student's adviser.

Teaching Experience. Teaching experience is highly desired, but not available within the IES Program; therefore, it is not required. The Program works closely with its constituent departments in an attempt to provide some teaching experience.

Written and Oral Qualifying Examinations. When the student has completed the required coursework and prior to advancement to candidacy, a series of written examinations covering the major and minor fields will be administered. These will 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, an oral examination, based on the written examinations and the candidate's dissertation prospectus will be administered. The latter examination, administered by the doctoral committee, is intended to probe the candidate's grasp of the entire field. Should the student fail either the written or oral examinations, the Interdepartmental Degree Committee may vote to allow reexamination.

Doctoral Committee. The doctoral committee is established with the same requirements as those of the Graduate Council.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is designed to allow the committee to evaluate the dissertation within the discipline and within the student's own specialization. Although it is stated as a requirement of all students, individual circumstances have on occasions dictated waiver of the Final Oral Examination.

Time to Degree. Provided that no deficiencies exist, a full-time student should complete his or her coursework and be prepared for the doctoral examinations within 14 academic quarters. Following this, the dissertation may be completed in seven additional quarters. Thus, the total time to degree from admission to the program is approximately 21 academic quarters. Because the program is unique and the qualifications of incoming students considerably varied, time to degree will vary also.

Candidate in Philosophy Degree. Upon successful completion of the written and oral examinations, the student will be advanced to candidacy and awarded the C.Phil degree.

Disqualification and Appeal of Disqualification. Failure to maintain a minimum average of 3.0 (B) constitutes the usual grounds for a recommendation of termination. In this, and in other cases, the Interdepartmental Degree Committee is the recommending body and the body to which appeal of such recommendation must be made.

Other Relevant Information. Because Indo-European Studies is an interdepartmental program, many of the courses that constitute the major are listed as "Related Courses in Other Departments." However, certain basic courses are specifically and solely IES courses. Those are listed below.

Upper Division Courses

131. European Archaeology: From the Neolithic to the Bronze Age.

132. European Archaeology: The Bronze Age.

M150. Introduction to Indo-European Linguistics. (Same as Linguistics M150.)

199. Special Studies. (½ to 2 courses)

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

M250A-M250B. European Archaeology. (Same as Anthropology M206A-M206B.) Prerequisite: consent of instructor. Credit is given only upon completion of both quarters. The full sequence may be repeated for credit. Studies in ancient European archaeological materials, and their relationship to the Near East, Western Siberia, and Central Asia. Mrs. Gimbutas

280A-280B. Seminar in Indo-European Linguistics. Prerequisite: course 210. Selected topics in Indo-European comparative grammar for advanced graduate students. Mr. Anttila

596. Directed Individual Studies. (½ to 2 courses)

597. Preparation for Doctoral Qualifying Examination. (½ to 2 courses)

599. Research for the Dissertation. (½ to 2 courses)

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. Field Work 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. Aegean Bronze Age.

260. Seminar in Roman Religion.

268. Seminar in Comparative Mythology.

English M111D. Celtic Mythology.

M111E. Survey of Medieval Celtic Literature.

M111F. Celtic Folklore.

211. Old English.

216A-216B. Old Irish.

217A-217B. Medieval Welsh.

218. Celtic Linguistics.

Folklore M112. Survey of Medieval Celtic Literature.

M122. Celtic Mythology.

M126. Baltic and Slavic Folklore and Mythology.

M127. Celtic Folklore.

German 230. Survey of Germanic Philology.

231. Gothic.

232. Old High German.

233. Old Saxon.

M245A. Germanic and Scandinavian Mythology.

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.

210A-210B. The History of the Persian Language.

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.

160. History of Linguistics through the 19th-Century.

Oriental Languages 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.

Scandinavian (Germanic Languages) 151. Elementary Old Icelandic.

152. Intermediate Old Icelandic.

M245. Germanic and Scandinavian Mythology.

Semitics (Near Eastern Languages) 140A-140B. Elementary Akkadian.

141. Advanced Akkadian.

220A-220B. Ugaritic.

Slavic 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.

Urdu (Near Eastern Languages) 101A-101B-101C. Elementary Urdu.

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 and to graduate students assigned to the colloquia by their advisers. Graduate 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 Dean of the College of Letters and Sciences, (213) 825-4453.

African Studies

The African Studies Center annually sponsors at least one interdisciplinary colloquium on Africa. These colloquia focus on topics in the social sciences or humanities which cross disciplinary boundaries. Previous colloquia have dealt with such subjects as cultural pluralism, constraints on development and the adaptation of legal systems. It is the policy of the African Studies 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. The interdisciplinary colloquium for the academic year 1982-83 will be on the subject of "Critical African Issues in U.S. Foreign Policy." The organizer of this colloquium will be Professor Richard Sklar of the UCLA Political Science Department. Inquiries may be directed to Prof. Sklar at this Center.

For further information about African Studies Center colloquia, please contact the Assistant to the Graduate Adviser, Ms. Maxine Driggers, Phone (213) 825-2944.

The Jacob Marschak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences

The Marschak Colloquium provides a forum for interaction among faculty and students interested in the application of mathematics (and statistics) to the behavioral sciences, including anthropology, architecture, artificial intelligence, biology, business, computer science, economics, education, engineering, geography, linguistics, management, operations research, philosophy, political science, psychology, public health, public planning and policy, sociology, and systems analysis.

The Colloquium sponsors presentations by leading experts in these fields, including faculty members from UCLA, other UC campuses, and other universities. The Colloquium meets alternative Fridays, during the academic year from 1:00 to 3:00 in GSM 2270. Announcements of presentations, including abstracts of the papers to be presented, are circulated and posted on campus; announcements also appear in *UCLA This Week*.

Islamic Studies (Interdepartmental)

The interdepartmental program for the Master of Arts and Ph.D. degrees in Islamic Studies is designed primarily for the student desiring to prepare for an academic career. It may, however, be found useful also for the student seeking a general education and desiring a special emphasis in this particular area or for a student who plans 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 indicated below, the special course of studies is formulated for each candidate according to his/her experience and requirements.

The Master of Arts Degree

Admission Requirements. In addition to the general University requirements, a Bachelor of Arts degree in Near Eastern Studies or its equivalent is required. The Interdepartmental Degree Committee will pass on the application for admission to the program. A student entering the program is normally expected to have completed the equivalent of advanced intermediate Arabic (Arabic 102A-102B-102C); and advanced Persian (Persian 102A-102B-102C), or advanced Turkish (Turkish 103A-103B). In addition, the student is expected to have completed the equivalent of two years of Near Eastern history (classical and modern); some coursework in Islamic culture and institutions may be included 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 is required of graduates of American universities and recommended for overseas applicants.

No screening examination is required. Provided the student meets the admission requirements stated above, no specific coursework is required.

A departmental brochure can be obtained by writing to the G.E. von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA.

Advising. Graduate Adviser: Students are to consult with the Chair of the Islamic Studies Committee, Professor Speros Vryonis, Jr., G.E. von Grunebaum Center for Near Eastern Studies.

Appointments for consultation with the Graduate Adviser should be made through the Center. Should consultation with other members of the Interdepartmental Degree Committee be in order, appointments will be scheduled through the Center. Students are apprised orally at the beginning of each quarter of their progress and/or deficiencies and a written record of the interview is kept in their files. Consultation data sheets are kept on file. All students will be reviewed at the end of their first year to determine whether their progress is sufficient to warrant continuation in the program.

Major Fields or Subdisciplines. Arabic, Persian, Turkish, History of the Near East, Political Science, Anthropology, Sociology.

Foreign Language Requirement. A candidate for the degree of Master of Arts in Islamic Studies will be required to show proficiency in either French or German. The student is expected to pass the graduate foreign language reading examination (Educational Testing Service) in French or German by the end of the third quarter of residence.

Course Requirements. A minimum of nine courses; no fewer than four courses on the appropriate level in the two Near Eastern languages of the candidate's choice and no fewer than five courses chosen from the relevant upper division and graduate courses in history, political science or any of the other fields represented in the program depending on the student's preparation and specific needs, with the provision that the selection must be limited to two of these disciplines. The omission of history may be approved only in exceptional cases. Of the nine courses for the M.A. degree, five must be on the graduate level.

Thesis or Comprehensive Examination Plan. Only the Comprehensive Examination Plan is acceptable. The candidate 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 will be determined by the Interdepartmental Degree Committee. The examiner or examiners will be appointed by the Chair of the Interdepartmental Degree Committee.

Time to Degree

	Academic Quarters	Calendar Years
From graduate admission to completion of required courses, approval of the Comprehensive Examination and award of the degree.	4*	1½*
Upper time limit for completion of all requirements.	9	3

*Students who enter the program with deficiencies may require six quarters (two calendar years).

500 Series Course Limitations.

Course No.	No. of Units	Type of Grade	Number of Times May Be Repeated
596	2-8	S/U	No limit
597	2-8	S/U	Normally one repeat in each discipline
598	2-8	S/U	No limit established

Only 8 units of all types of 500 series courses may apply toward the total course requirement for the M.A. degree as well as toward the minimum graduate course requirement for the degree, providing they are not in the same discipline.

Disqualification. The decision to recommend termination of graduate status will be reached by the Chair of the Interdepartmental Degree Committee, upon consultation with the Graduate Adviser and appropriate faculty members. Such decision may be based upon the student's failure to maintain the required progress toward the degree, failure to maintain a grade point average of 3.0, or failure in passing the requisite examinations.

Appeals. The student may appeal the decision to recommend termination to the Interdepartmental Degree Committee.

The Ph.D. Degree

Admission Requirements. 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 deficiences 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 is required of graduates of American universities and recommended for overseas applications.

A departmental brochure can be obtained by writing to G.E. von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA.

Advising. Graduate Adviser: Students are to consult with the Chair of the Islamic Studies Committee, Professor Speros Vryonis, Jr., G.E. von Grunebaum Center for Near Eastern Studies.

Appointments for consultation with the Graduate Adviser should be made through the Center upon admission to the program and throughout the year as needed. After the first year (three quarters) an advisory committee for each candidate will be appointed. This committee, consisting of four faculty members, will supervise the four fields in which the candidate is to be examined. Consultation with these faculty members will be as frequent as needed. Students are apprised orally by the Graduate Adviser at the beginning of each quarter of their progress and/or deficiencies and a written record of the interview is kept in their files.

Major Fields or Subdisciplines. Arabic, Persian, Turkish, History, Anthropology, Sociology, Political Science.

Foreign Language Requirement. At the beginning of his/her first quarter in residence, the candidate will present to the Chair of the Interdepartmental Degree Committee, a written statement explaining his/her preparation in one of the two modern languages required by the University (generally French and German). He/she is expected to pass the graduate foreign language reading examination in both languages by the end of his/her second year of residence. For work in some fields, a reading knowledge of Italian or Spanish or Russian may be substituted for one of the above European languages after satisfactory advisement. The Educational Testing Service examination is acceptable.

Course Requirements. Course requirements for the student entering directly into the Ph.D. program are as in the M.A. program. Beyond this, the student will continue advanced courses in his/her two Near Eastern languages, in Near Eastern history and in one of the social sciences, upon specific advisement of the Interdepartmental Degree Committee.

Written and Oral 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). Upon successful completion of the written examinations, the student must present himself/herself for the oral examination before the entire doctoral committee. 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.

Doctoral Committee. The committee is to be appointed by consultation between the student and the Chair of the Interdepartmental Degree Committee.

Final Oral Examination Following Completion of the Dissertation. With the approval of the doctoral committee at the time of the Oral Qualifying Examination, the Final Oral Examination may be waived.

Time to Degree.

1) From graduate admission to Written and Oral Qualifying Examinations: nine quarters.

2) From graduate admission to the approval of the dissertation prospectus: nine quarters.

3) From advancement to candidacy to the Final Oral Examination: three to six quarters.

4) From graduate admission to the award of the degree: 15 quarters.

(Students with an M.A. degree in the program may be able to complete all requirements and the dissertation in as few as 10 quarters.)

Candidate in Philosophy Degree. Students are eligible to receive the C.Phil. degree on advancement to candidacy.

Disqualification and Appeal of Disqualification. The decision to recommend termination of graduate status will be reached by the Chair of the Interdepartmental Degree Committee, upon consultation with the Graduate Adviser and the student's doctoral committee. Such decision may be based upon the student's failure to maintain the required progress toward the degree, failure to maintain a grade point average of 3.0, or failure in passing the requisite examinations. The student may appeal the decision to recommend termination to the Interdepartmental Degree Committee.

Upper Division Courses

Anthropology

130. The Study of Culture.

135P. Social and Psychological Aspects of Myth and Ritual

150. Comparative Society.

156. Comparative Religion

161. Development Anthropology

163. Women in Culture and Society

167. Urban Anthropology

176. Cultures of the Middle East

Arabic

102A-102B-102C. Intermediate Arabic

103A-103B-103C. Advanced Arabic

111A-111B-111C. Spoken Arabic

112. Spoken Egyptian Arabic

113A-113B-113C. Spoken Iraqi Arabic

114A-114B-114C. Spoken Moroccan Arabic

130A-130B-130C. Classical Arabic Texts

132A-132B-132C. Philosophical Texts

140A-140B-140C. Modern Arabic Texts

141. Modern Arabic Literature

150A-150B. Survey of Arabic Literature in English

199. Special Studies in Arabic

Armenian

130A-130B. Elementary Classical Armenian

131A-131B. Intermediate Classical Armenian

132A-132B. Advanced Classical Armenian

Art

104B-104C-104D. Architecture and the Minor Arts of Islam in the Middle Ages

105E. Byzantine Art

Berber

101A-101B-101C. Elementary Berber

102A-102B-102C. Advanced Berber

120A-120B-120C. Introduction to Berber Literature

130. The Berbers

199. Special Studies in Berber Languages

Classics

M170A-170B. Byzantine Civilization (Same as History M122A-122B)

French

121A. Franco-African Literature

Geography

187. The Middle East

188. Northern Africa

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

Iranian

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

Islamics

110. Introduction to Islam

Jewish Studies

110. Social, Cultural and Religious Institutions of Judaism

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

Sociology

132. Population and Society in the Middle East

133. Comparative Sociology of the Middle East

151. Culture and Personality

Turkic Languages

101A-101B. Elementary Turkish

102A-102B. Intermediate Turkish

103A-103B. Advanced Turkish

112A-112B-112C. Uzbek

114A-114B-114C. Bashkir

160A-160B. Cultural History of the Turks

180A-180B-180C. Introduction to Turkic Studies

199. Special Studies in Turkic Languages

Graduate Courses

Anthropology

215. Field Training in Archaeology
230P. Ethnology

230Q. Cultural Anthropology

232P. Cultural Modes of Thoughts

232Q. Myth and Ritual

239P. Selected Topics in Field Training in Ethnography

239Q. Analysis of Field Data

259. Kinship

273. Cultures of the Middle East

Arabic

220A-220B-220C. Islamic Texts

230A-230B-230C. Arabic Poetry

240A-240B-240C. Arab Historians and Geographers

250A-250B-250C. Seminars in Arabic Literature

260A-260B-260C. Introduction to Modern Arabic Dialects

280. Structure of Classical Arabic

596. Directed Individual Study

597. Examination Preparation

599. Dissertation Research and Preparation

Archaeology

259. Field Work in Archaeology

596. Individual Studies for Graduate Studies

597. Preparation for Doctoral Qualifying Examinations

Armenian

210. History of the Armenian Language

220. Armenian Literature of the Golden Age (A.D. Fifth Century)

Art

Problems in Islamic Art

Classics, Greek

231A-231B-231C. Seminar in Later Greek and Byzantine Literature

French

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 Literatures

Geography

287. Middle East

288. Northern Africa

Hebrew

230. Seminar in Medieval Hebrew Literature

231. Texts in Judaeo-Arabic

History

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. Doctoral Research and Writing

Iranian

210A-210B. The History of the Persian Language

211A-211B. Modern Iranian Dialects
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. Dissertation Research and Preparation

Islamics

596. Directed Individual Study

597. Examination Preparation

598. Thesis Research and Preparation

599. Dissertation Research and Preparation

Linguistics

220. Linguistic Area

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. Dissertation Research and Preparation

Political Science

250F. Seminars in Regional and Area Political Studies. Middle Eastern Studies

250K. North African Studies

Semitics

215A-215B. Syriac

Sociology

236. Social Change in the Middle East

237. Social Stratification in the Middle East

Turkic Languages

210A-210B-210C. Ottoman

211. Ottoman Diplomatics

220A-220B-220C. Chagatay

230A-230B-230C. A Historical and Comparative Survey of the Turkic Languages

235A-235B-235C. Middle Turkic

240A-240B-240C. Islamic Texts in 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. Dissertation Research and Preparation

Urdu

101A-101B-101C. Elementary Urdu

199. Special Studies in Urdu

Italian

(Office, 340 Royce Hall)

Giovanni Cecchetti, Dottore in Lettere, *Professor of Italian.*
Fredi Chiappelli, Dottore in Lettere, Dott. Lett. "Honoris Causa", *Professor of Italian.*
Margherita Cottino-Jones, Ph.D., Dottore in Lettere, *Professor of Italian (Chair of the Department).*
Pier-Maria Pasinetti, Ph.D., Dottore in Lettere, *Professor of Italian and Comparative Literature.*
Charles Speroni, Ph.D., *Emeritus Professor of Italian.*
Franco Betti, Ph.D., *Associate Professor of Italian.*
Edward F. Tuttle, Ph.D., *Associate Professor of Italian (Upper Division Undergraduate Adviser and Graduate Adviser).*
Lucia Re, Dottore in Lettere, *Assistant Professor of Italian.*

Mirella Cheeseman, Dottore in Legge, *Lecturer in Italian (Director of Language Instruction Program).*
Althea Reynolds, B.A., *Lecturer in Italian (Lower Division Undergraduate Adviser).*

The Master of Arts Degree

Admission Requirements. Three letters of recommendation are required. The address is: Department of Italian, Royce Hall 340, Att: Graduate Counselor, UCLA, Los Angeles, California 90024.

No application form in addition to the one used by the Graduate Admissions Office is required.

Files of prospective graduate students meeting the University minimum requirements are screened by the Departmental Committee on Admissions. This committee decides whether any of the students need additional undergraduate courses to integrate his/her curriculum. This applies particularly to graduates entering with a major other than Italian as well as to those coming to UCLA from another institution. In case the student's file shows a degree of deficiency in preparation that, without ruling out admission, raises doubts on the possibilities of working up to the Department's standards, the Committee recommends admission on a provisional basis.

Advising. Graduate Adviser: Dr. Edward Tuttle, Department of Italian, Royce Hall 340, UCLA, Los Angeles, California 90024.

All graduate students entering the M.A. program are introduced to the faculty in a general

meeting. All new students must meet with the Department Graduate Adviser who will specify the requirements for their first year of their graduate study according to Department regulations and Universitywide requirements. The Graduate Adviser is available for consultation with students as often as needed. Students, however, should contact the Graduate Adviser at least once every term.

Major Fields. No major fields or areas of specialization are allowed. Our master's degree aims at providing our students with a broad and sound knowledge of all main areas of Italian Literature.

Foreign Language Requirements. A reading knowledge is required of one other foreign language approved by the Graduate Adviser or evidence of successful completion of courses through at least level 3. This requirement must be met at least one quarter before the date of the Comprehensive Examination.

Course Requirements

Master of Arts in Italian Literature

1. Thesis Plan: nine courses, of which a minimum of six must be in the Italian 200 series; Italian 200 ABC and Italian 205B are required.

2. Comprehensive Examination Plan: 12 courses, four of which are required, Italian 200 ABC and Italian 205B. The other eight must be distributed in three main literary periods — Middle Ages, Renaissance, Modern times, (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 and 205B and Art 230, are strongly recommended.)

Master of Arts in Italian Language

1. Thesis Plan: 12 courses, of which a minimum of six must be in the 200 series, and the following are required: Italian 200ABC, 259 A and B, Latin 232, Linguistics 100 or 140 or both.

2. Comprehensive Examination Plan: 12 courses of which the following are required: Italian 130, 200 ABC, 259 A and B, Latin 232, or Italian 210A or both. The others should be taken respectively in the Medieval period (seminar on Dante strongly recommended), in the Renaissance, and in the Modern period.

Thesis or Comprehensive Examination Plan.

Thesis Plan: In order to favor research-orientated students of exceptional merit, the Department has established the following Thesis Plan. Any student who has completed a first year of graduate work with at least a 3.70 grade point average rating, may be nominated by one of the faculty members of the Department for application to the M.A. in Italian, Thesis Plan.

At this point in their graduate preparation, the students must have completed the 200ABC series, 205B and at least two other graduate courses in Italian. A Guidance Committee composed of three members of the Department will evaluate the student's application. On acceptance, the Committee, together with the student, will have to include three 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 the student's second year of graduate work; it must be directed by a faculty member of the Guidance Committee and it must be approved by the Guidance Committee. After completion of the thesis, the candidate must pass an oral examination testing his/her knowledge in the field of the thesis and his/her general competence in Italian Literature.

Comprehensive Examination Plan: In general, the Department favors the Comprehensive Examination Plan. The Comprehensive Examination Committee is appointed by the Chair of the Department in consultation with students and their faculty advisers and consists of a minimum of a 4-hour written examination to be given the next to the last week preceding the final examination period of the Fall and Spring Quarters. It is a broad testing of the candidate's general competency and does not have major and minor fields of emphasis. After the written examination, the candidate is required to take an oral examination. A candidate who has failed the Comprehensive Examination may be reexamined once, subject to approval by the Examination Committee and the Chair of the Department.

Time to Degree. The time to the master's degree is two years or, six academic quarters.

500 Series Course Limitations

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	2-8	S/U	Twice
597	2-8	S/U	None
599	2-8	S/U	No limit

No 500 Series courses can apply to the M.A. course requirements.

Disqualification and Appeal of Disqualification. Conditions which may lead to termination include failure to maintain a grade point average above 3.0, insufficient progress towards the degree, or failure of M.A. examinations. A student who fails to maintain an overall grade point average of 3.00 is placed on academic probation. If, in the first quarter of probationary status, the student succeeds to achieve a 3.0 overall grade point average, he/she will no longer be on probation; if the student does not maintain a grade point average of 3.0 for that quarter, the Department will normally recommend extension of probationary status for another quarter; if the student has not maintained a grade point average of 3.0 for that quarter, the Department will normally recommend dismissal.

Appeals. Every recommendation for probation and dismissal is discussed and decided upon by the Department faculty. The student may appeal to the Department, in writing, any recommendation for dismissal.

The Ph.D. Degree

Admission Requirements. Three letters of recommendation are required. The address is Department of Italian/Att/Graduate Counsellor, UCLA, Los Angeles, California 90024.

In addition to the University minimum requirements, at least two, and preferably three, letters of recommendation from professionals in the field of Italian studies are required.

Prerequisite for entering the Department's doctoral program is an M.A. from UCLA or from a university in the United States or the equivalent.

Graduate students entering the doctoral program in Italian with a master's degree from another institution, or the equivalent, will be required to take Part I of the Ph.D. Qualifying Examination by the end of their third quarter of residence. Students who fail Part I of the Qualifying Examination are not admitted to the Ph.D. program.

A student admitted to the Ph.D. program without the M.A. degree may expect to take the Qualifying Examination, Part II at the end of the 12th quarter in residence, carrying a normal course load.

Students holding the M.A. from UCLA will normally take Part II of the Qualifying Examination at the end of their sixth quarter in residence. Those holding their M.A. degree from another institution will take Part II of the Qualifying Examination after approximately eight quarters.

Advising. Graduate Adviser: Dr. Edward Tuttle, Department of Italian, Royce Hall 340B, UCLA, Los Angeles, California 90024.

All students continuing toward the Ph.D. in Italian with an M.A. from UCLA have an assigned faculty adviser who may become the chair of their Doctoral Guidance Committee. New students who are entering the Ph.D. program in Italian are introduced to the faculty in a general meeting and according to their academic interests each of them will be assigned a faculty adviser. All students must have selected their doctoral committee chair during the first quarter they are enrolled in the Ph.D. program. By the end of the second quarter they must have selected the departmental members of their Doctoral Guidance Committee. The chair of the doctoral committee in consultation with the student and eventually with the other members of the student's doctoral committee plans the student's program.

The Doctoral Guidance Committee prepares and administers Part II of the Written Qualifying Examination after the student has completed the 10-course requirement and other preparatory work — usually within six quarters after completion of Part I.

Major Fields or Subdisciplines

Major fields: two centuries of Italian Literature either in the Medieval, Renaissance and Baroque, or Modern areas.

Minor fields: two centuries of Italian Literature from any of the areas mentioned above.

Candidates may choose a major in a literary genre or a minor outside the Department, provided that it relates to their major fields of specialization. This field must have the approval of the candidate's entire Department.

Foreign Language Requirements. A student will normally pass this requirement by giving evidence of successful completion of courses through level 3 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 credited toward fulfillment of this requirement. The language requirement must be satisfied prior to taking Part II of the Qualifying Examinations, either by Educational Testing Service or departmental examination or by petition for course credit to the Graduate Division.

Course Requirements. Required courses: 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. In addition, the student will take such courses as his/her guidance committee will prescribe for the Qualifying Examinations: such as 596 or 597.

Qualifying Examination. Part I. The Comprehensive Examination for the M.A. in Italian at UCLA corresponds to Part I of the Ph.D. program Qualifying Examinations. Graduate students entering the Ph.D. program in Italian with an M.A. from another university or the equivalent, will be required to take Part I by the end of their first three quarters at UCLA.

Qualifying Examination: Part II. The Department requires both a Written and an Oral Qualifying Examination, 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: one 8-hour examination in the candidate's major field, consisting of an essay in the history of the literature and a critical analysis of a literary text selected from material covering two centuries of Italian literature; one 6-hour examination in the candidate's minor field, consisting of an essay in the history of the literature and five brief discussion topics selected from two centuries of Italian literature other than those comprising the major. In the case of the major field, both centuries must be within the same area: Medieval, Renaissance and Baroque, or Modern; for the minor field, the two centuries may belong to different areas. Additionally, a 2-hour oral examination is required which shall include a discussion of the written examinations, an analysis of a text from the area of the major, a general discussion of Italian literature, and the presentation of a brief written statement of the dissertation prospectus. A summary of requirements entitled "Regulations for the Ph.D. Examination" is available in the Department. A student who fails Part II of the Qualifying Examination may be reexamined upon unanimous approval of the Guidance Committee, and only after at least one academic quarter of additional residence.

Doctoral Committee. The student's doctoral committee will consist of a minimum of three faculty members actually participating in the Department of Italian and a minimum of two "outside" members, at least one of which is from the student's related discipline. The doctoral committee will consider and approve the student's dissertation topic. A successful oral defense of the dissertation will constitute the final examination for the degree.

Final Oral Examination Following Completion of the Dissertation. After acceptance of the dissertation in its final form, the candidate may be required to take an oral examination which will cover principally the field within which the dissertation falls.

Time to Degree. Six years from beginning of graduate status.

Candidate in Philosophy Degree. The Department of Italian grants the C. Phil degree after advancement to candidacy for the Ph.D., and upon application to administrative authorities.

Disqualification and Appeal of Disqualification. Conditions which may lead to termination include failure to maintain a grade point average above 3.0, insufficient progress towards the degree, or failure of M.A. examinations. A student who fails to maintain an overall grade point average of 3.00 is placed on academic probation. If, in the first quarter of probationary status, the student achieves a 3.0 overall grade point average, he/she will no longer be on probation; if the student maintains a grade point average of 3.0 for that quarter, the Department will normally recommend extension of probationary status for another quarter; if the student has not maintained a grade point average of 3.0 for that quarter, the Department will normally recommend dismissal.

Every recommendation for probation and dismissal are discussed and decided upon by the Department faculty. The student may appeal to the Department, in writing, any recommendation for dismissal.

Other Relevant Information. All courses from Italian 201 on can be taken towards a Ph.D.

Graduate Courses

200A. Readings in Italian Literature. Class meets three hours weekly. Prerequisite: Graduate Standing. Italian 200A will cover the literature of the generation dominated by the Franciscan movement and proceed through the culture of Frederick II's court to the three classics of the XIV century, Dante, Petrarch, and Boccaccio. Finally, it will encompass the early humanists, the post-classics generation, and the cultural booming under Lorenzo il Magnifico.
Mr. Chiappelli, Mrs. Cottino-Jones

200B. Readings in Italian Literature. Class meets three hours weekly. Prerequisites: Graduate Standing, Italian 200A. Italian 200B will cover the literature of the High Renaissance of Central Italy in its three most popular genres, lyric poetry, chivalric poem, and theater, and proceed through the counter-reformistic culture, especially of Northern and Southern Italy. Finally, it will encompass the main Enlightment figures, and the cultural evolution stemming from them.
Mr. Betti, Mr. Chiappelli

200C. Readings in Italian Literature. Class meets three hours weekly. Prerequisites: Graduate Standing, Italian 200B. Italian 200C will cover the literature of the Romantic era and proceed through a study of the literary figures of the Italian "Risorgimento". Finally, it will encompass 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. Class meets three hours weekly.
Mrs. Cottino-Jones

205A-205B. Methods of Literary Criticism. Classes meet three hours weekly.

205A. Brief History of Literary Criticism.

205B. Discussion of Modern Critical Approaches.
Mrs. Cottino-Jones

210A-210B-210C. Early Italian Literature. Classes meet three hours weekly.

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 Fourteenth Century. Classes meet three hours weekly.

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 Fifteenth Century. Classes meet three hours weekly.

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 Sixteenth Century. Classes meet three hours weekly.

216A. Machiavelli. Mr. Chiappelli

216B. Ariosto.

216C. Bembo, Folengo, Aretino, and the Theatre.
Mrs. Cottino-Jones

216D. Prose (Castiglione, Della Casa, Guicciardini, Cellini).

216E. Tasso. Mr. Chiappelli

217A-217B-217C. Italian Literature of the Seventeenth Century. Classes meet three hours weekly.

217A. Bruno, Campanella, Galilei, Magalotti.
Mrs. Cottino-Jones

217B. Commedia dell'arte and the Theatre.
Mrs. Cottino-Jones

217C. Marino and Marinisti. Mrs. Cottino-Jones

218A-218E. Italian Literature of the Eighteenth Century. Classes meet three hours weekly.

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 Nineteenth Century. Classes meet three hours weekly.

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. The Italian Literature of the Twentieth Century. Classes meet three hours weekly.

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.) Course meets two hours weekly.

Seminars

250A-250D. Seminar on Dante. Course meets three hours weekly. Mr. Chiappelli

251. Seminar on Petrarch. Course meets three hours weekly. Mr. Chiappelli

252. Seminar on Boccaccio. Course meets three hours weekly. Mrs. Cottino-Jones

253A-253B-253C. Seminar on Chivalric Poetry in Italy. Course meets three hours weekly. 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. Course meets three hours weekly. Mr. Chiappelli

255A-255B. Seminar on the Baroque. Course meets three hours weekly. Mrs. Cottino-Jones

256A-256B. Seminar on the Eighteenth Century. Course meets three hours weekly. Mr. Pasinetti

257A-257B. Seminar on Romanticism. Course meets three hours weekly. Mr. Pasinetti

258A-258B. Seminar on Contemporary Italian Literature. Course meets three hours weekly. 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 will be considered in its areal dimension. Specific geolinguistic problems and solutions will illustrate 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 course focusing on Themes and Issues outside of the uniquely Italian Literature topics covered in regular Departmental Graduate course.

370. Problems and Methods in the Teaching of Italian. Course meets two hours weekly. Mrs. Cheeseman

Individual Study and Research

495A-495D. The Teaching of Italian at the College Level. (½ to 1 course 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. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Studies. (1 to 2 courses)

597. Preparation for Comprehensive Examinations. (1 to 2 courses)

599. Doctoral Research and Writing. (1 to 2 courses)

Kinesiology

(Office, 206 Men's Gymnasium)

R. James Barnard, Ph.D., *Professor of Kinesiology.*
Camille Brown, Ed.D., *Professor of Kinesiology.*
Bryant J. Cratty, Ed.D., *Professor of Kinesiology.*
[16]V. Reggie Edgerton, Ph.D., *Professor of Kinesiology.*
Glen H. Egstrom, Ph.D., *Professor of Kinesiology.*
Gerald W. Gardner, Ph.D., *Professor of Kinesiology (Vice-Chair of the Department).*
Louis J. Goldberg, D.D.S., Ph.D., *Professor of Dentistry, Anatomy, and Kinesiology.*
Jack F. Keogh, Ed.D., *Professor of Kinesiology.*
Laurence E. Morehouse, Ph.D., *Professor of Kinesiology.*
Richard A. Schmidt, Ph.D., *Professor of Kinesiology.*
[16]Judith L. Smith, Ph.D., *Professor of Kinesiology (Chair of the Department).*
Serena E. Arnold, Ed.D., *Emeritus Professor of Kinesiology.*
Rosalind Cassidy, Ed.D., *Emeritus Professor of Kinesiology.*
Donald T. Handy, Ed.D., *Emeritus Professor of Kinesiology.*
Valerie V. Hunt, Ed.D., *Emeritus Professor of Kinesiology.*
Wayne W. Massey, Ph.D., *Emeritus Professor of Kinesiology.*
Ben W. Miller, Ph.D., *Emeritus Professor of Kinesiology.*
Norman P. Miller, Ed.D., *Emeritus Professor of Kinesiology.*
Raymond A. Snyder, Ed.D., *Emeritus Professor of Kinesiology.*
Carl H. Young, Ed.D., *Emeritus Professor of Kinesiology.*
Tara K. Scanlan, Ph.D., *Associate Professor of Kinesiology.*
Ronald F. Zernicke, Ph.D., *Associate Professor of Kinesiology.*
Scott H. Chandler, Ph.D., *Assistant Professor of Neuroscience.*
Robert J. Gregor, Ph.D., *Assistant Professor of Kinesiology.*
Diane Shapiro, Ph.D., *Assistant Professor of Kinesiology.*

•

Roland Roy, Ph.D., *Adjunct Assistant Professor of Kinesiology.*

The Kinesiology Department at UCLA offers a Master of Science and a Doctor of Philosophy degree in the Life Sciences Division of the College of Letters and Science, within the following fields:

Exercise physiology: cardiovascular adaptations of exercise, environmental factors influencing work capacity, neuromuscular and metabolic adaptations to exercise, and neuromotor control;

Biomechanical determinants of motor performance;

Motor control, perceptual motor development and social/psychological determinants of human motor performance.

When applying for graduate work, the applicant should specify an interest in one of these general fields.

Admission Requirements. Applicants for graduate study in the Department of Kinesiology 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) on all upper division undergraduate coursework is required. Applicants who meet University minimum requirements are considered by a departmental faculty committee on the following bases: (1) prior scholastic performance, (2) three letters of recommendation, and (3) applicant's statement of purpose. The statement of purpose is given close consideration by the selection committee and should include:

a) Relevant background or preparation (previous academic specialization, work experience, personal experience, etc.).

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 applicant's study interest.

A list of faculty names and research interests is available from the Department. Applicants are encouraged to communicate directly with the faculty and personal interviews are encouraged. Further information may be obtained by contacting the Graduate Adviser in Men's Gym 214, or by writing the Department of Kinesiology, UCLA, Los Angeles, California 90024.

Aptitude tests, including the Graduate Record Examination 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 are reviewed only in January/February each year.

Faculty Graduate Adviser. The student is responsible for becoming acquainted with the faculty of the Department and for specifying a potential adviser whose area of specialization is common to the student's study/research interest. The graduate student works closely with the chosen adviser, and the program of study and research is basically a contract between the student and the faculty adviser or Guidance Committee.

Disqualification. Graduate students are expected to maintain a grade point average of 3.0. Students who fail to do so will be subject to review by the Graduate Affairs Committee which may make a recommendation to dismiss, to continue on contract, or to continue with warning. Students may be terminated if

they appear to be making insufficient progress toward a degree, have failed the Master's Comprehensive Examination twice (or have not been recommended for reexamination after a failure), have failed doctoral examinations, or are unable to maintain the required scholastic average.

Appeals. Appeal may be made to the Graduate Affairs Committee only with the support of a faculty adviser.

The Master of Science Degree

Undergraduate Preparation. 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 a minimum undergraduate preparation prior to their graduate work. Completion of course deficiencies may take as much as an additional year of coursework, which will not be credited toward the master's degree. The following undergraduate preparation is required:

Basic preparation in the life and physical, and social sciences. One course each: inorganic chemistry, organic chemistry, cellular biology, physics (mechanics), statistics, introductory psychology, and one additional introductory course in anthropology, psychology, or sociology.

Basic preparation in kinesiology. A lack of equivalent coursework in the following areas will necessitate acquiring undergraduate preparation by taking departmental core courses which will not be credited toward the master's degree. These core courses include (Kinesiology Department course numbers are given in parentheses): Introduction to Human Physiology (12), Human Neuromuscular Anatomy (14), Behavioral Bases of Movement (120, 120L), Biomechanical Bases of Movement (122, 122L), Cardiorespiratory Bases and Environmental Factors Affecting Movement (124, 124L), Neuromuscular and Metabolic Bases of Movement (126, 126L), plus 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/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; one other course from either Kinesiology or a related field.

A minimum of six of these nine courses must be graduate-level (200) courses, toward which one Individual Studies (Kinesiology 596) course may apply. Lists of approved related field and statistics or research design courses may be obtained from the Department.

Thesis or Comprehensive Examination Plans

Nomination of the Thesis or Comprehensive Examination Committee. The student is responsible for finding a faculty member who will serve as chair of the committee and for recruiting, with the advice and consent of the chair, two additional faculty members as committee members in accord with University regulations for the appointment of thesis committees. One committee member may be outside the department, and the student's faculty adviser need not serve as chair. Selection of the committee must be made by the time the student petitions to advance to candidacy.

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, the student proposes a problem area or outline of study, conducts original research in a specific area, and reports the results. With committee approval, the student may either submit a thesis manuscript or a manuscript suitable for publication.

Comprehensive Examination Plan. Students who elect the Comprehensive Examination Plan must achieve a passing mark on a Comprehensive Examination. The general purpose of the Comprehensive 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.

The comprehensive examination committee is responsible for preparing, administering, and evaluating the written examination and reporting the results to the Graduate Affairs Committee. Each member of the comprehensive examination committee must mark the written examination as "Pass with Honors," "Pass," or "Fail." An overall mark of "Pass" requires that only two committee members mark the examination as "Pass." However, there must be a unanimous vote to award an overall mark of "Pass with Honors."

While a written examination is required, the committee may choose to use additional means to evaluate the competency of the candidate. These supplementary procedures must be evaluated with a mark of "Pass" by at least two of the committee members.

A student who fails to successfully pass the Comprehensive Examination may not repeat the examination until the following quarter. A student may not take the examination a third time and may not change committee members without the permission of the Graduate Affairs Committee.

Time to Degree. Normal progress from graduate admission to completion of the required coursework is three to four quarters plus an additional one to three quarters for completion of a thesis or comprehensive examination. If preparation coursework is necessary, as much as three additional quarters may be required. Students are normally expected to complete all requirements for the master's degree in Kinesiology within seven quarters.

500 Series Course Limitations. A total of 8 units of 596 (Individual Studies) may be taken for credit; only one course (4 units) will count toward the minimum course requirement for the master's degree in Kinesiology. Courses 597 (Preparation for Master's Comprehensive Examination) and 598 (Research for the Preparation of the Master's Thesis) may not be used to fulfill any of the course requirements for the degree. There is no limit on the number of times a master's student may enroll in 597 or 598.

The Ph.D. Degree

Undergraduate Preparation. In *addition* to the preparation coursework required for master's students, all doctoral students are expected to have the following undergraduate preparation: two quarters of calculus and a second quarter of physics. Students must show a solid educational background in one of three general fields of kinesiology, and undergraduate and previous graduate work will be evaluated in terms of the student's declared field of interest. Course deficiencies will be identified after consultation with the adviser and must be made up before the First-Year Review (see below). Students admitted for one area may not specialize in another area unless all prerequisites are satisfied.

Guidance Committee. At the time of graduate admission, a faculty adviser is identified for doctoral students. During the first year of study, the student is responsible, with the advice and consent of the faculty adviser, for organizing the Guidance Committee. Faculty members constituting the Guidance Committee include the student's adviser and two others (one of whom must be in the Department) from the student's major and minor areas. Members of the Guidance Committee are responsible for approving the student's course of doctoral study, conducting a review of the student's progress at the end of the first year of study, and preparing and evaluating the Written Qualifying Examination. The Guidance Committee, with two additional faculty members, will subsequently constitute the student's doctoral committee.

Major Fields or Subdisciplines. From the three general content fields of the Department's instructional and research programs, eight *areas of concentration* have been identified:

(1) Cardiorespiratory adaptations to exercise
(2) Environmental factors influencing work capacity
(3) Metabolic aspects of exercise
(4) Neuromuscular adaptations to exercise
(5) Biomechanics
(6) Movement development
(7) Movement performance and acquisition
(8) Neutral control of movement

Each student will select one of the eight areas of concentration as a major and two areas as minors. These areas are expected to relate to the student's prpposed dissertation problem.

Course Requirements. Fourteen courses are specified for the doctoral degree, some of which may be satisfied by previous graduate work completed by the student. Selection of all courses must be approved by the student's guidance committee and will be determined in part by the student's selection of major and minor areas of concentration.

Departmental courses. A total of eight courses are required. Select three courses from: 210A, 210B, 210C, 230A, 240, 250, 260. Select five electives, including two seminars, from 211, 212, 221, 230B, 241, M243, 255, 258, 262, 291, 292, 294, 295. One Individual Studies (Kinesiology 596) may be applied as a non-seminar elective.

Extradepartmental courses. A minimum of four courses or 16 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.

Statistics courses. Two advanced statistics courses are required of all doctoral candidates. A list of approved courses is maintained by the Department.

Research competencies. Each student must complete one foreign language competency test (scoring 500 or better on an Educational Testing Service Graduate Foreign Language Test), or demonstrate alternate competencies by completing courses in electronics, computer programming, or advanced statistics and research design.

First-Year Doctoral Review. After completion of three quarters of coursework, the student will compile a portfolio containing UCLA transcripts and other supportive materials, including at least two written papers which demonstrate knowledge in the major and minor areas of concentration and competency in scientific writing. After evaluation of the portfolio and an interview with the student, the Graduate Affairs Committee, in consultation with faculty, will recommend that the student: (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 Requirement. Each candidate will serve in an instructional capacity for a minimum of two quarters. Teaching effectiveness will be assessed quarterly by the instructor in charge of the course and the students in the class. All teaching evaluations will become a permanent part of the student's departmental record.

Written Qualifying Examinations. Each doctoral student must take three written qualifying examinations: one in a major area and one in each of two minor areas. Written qualifying examinations are scheduled by the Department on a regular basis and may be taken when the student and Guidance Committee consider appropriate. These examinations, administered once per academic quarter, are prepared and evaluated by faculty members from the Department in each area of concentration and will be scored: (1) passed at the Ph.D. level of achievement, (2) passed at the master's level of achievement, or (3) failed. To continue the doctoral program, a student must pass each examination at the Ph.D. level of achievement. The student who fails to do so may elect to: (1) complete the master's degree, (2) discontinue graduate work in the Department, or (3) reschedule the area examinations at the discretion of the Guidance Committee. Permission to reschedule any area examination a third time will not be granted.

Oral Qualifying Examination. After successfully passing the Written Qualifying Examinations, an Oral Qualifying Examination will be conducted by the doctoral committee. Normally, the examination will be held the quarter following the completion of written examinations, all coursework, and after the student has completed two quarters of research work with the major professor. The oral examination will deal primarily with the student's dissertation prospectus and the student's ability to communicate scientific ideas orally. The examination will be scored "Pass" or "Fail." If the student does not pass, the Oral Qualifying Examination may be rescheduled at the discretion of the doctoral committee.

Dissertation. The candidate must submit a report of an original research study which meets the approval of the doctoral committee. The committee will be comprised minimally of the student's guidance committee and two additional professors, in accord with Graduate Division regulations.

Final Oral Examination Following Completion of the Dissertation. A Final Oral Examination is generally required. The members of the doctoral committee who are to approve the dissertation have the option to waive this final examination, but it is expected that a Final Oral Examination will be required in all but exceptional cases. The major emphasis in this examination will be a defense of the dissertation. The oral defense will be rated "Pass" or "Fail." If the student does not pass, the Final Oral Examination may be rescheduled at the discretion of the doctoral committee.

Time to Degree. Students entering the doctoral program with no deficiencies may be expected to complete the doctoral program within four years. Normative time-to-degree is formally specified as five years.

Graduate Courses

205. Human Movement Theory. Significant theoretical formulations of the body of knowledge of human movement. Ms. Brown

207. Respiratory Function During Exercise. (Formerly numbered 210A). Prerequisites: courses 124, 124L. Topics include the acute and chronic effects of exercise upon pulmonary gas exchange, gas transport and ventilatory control, and limiting factors to aerobic function. Mr. Gardner

208. Neuromuscular and Metabolic Factors in Exercise. (Formerly numbered 210B). Prerequisites: 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. (Formerly numbered 210C). Prerequisites: courses 122, 122L, 124, 124L, and 126, 126L; 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

211. Advanced Exercise Cardiovascular Physiology. Lecture, two hours; laboratory, three hours. Prerequisites: Physiology 101. Attention is focused on cardiovascular adaptations to acute exercise as well as adaptations associated with regular exercise training. Mr. Barnard

212. Advanced Cardiovascular Research Techniques. Lecture, one hour; laboratory, four hours. Prerequisites: course 211 and consent of instructor. One hour of lecture and four hours of laboratory per week to provide experience in working with experimental animals, conducting surgery, and an understanding of 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, 122L, and 124, 124L, or consent of instructor. Biomechanical, physiological, methodological and behavioral limitations to underwater activities. Mr. Egstrom

230A. Muscle Dynamics. Prerequisites: courses 122, 122L; 134A recommended. Integrated study of electrical and dynamic parameters of muscle-action to include topics in length-tension and force-velocity interrelationships; critical ahalysis of electromyographic and digital computer techniques. Mr. Gregor

230B. Musculoskeletal Mechanics. Prerequisites: courses 122, 122L; 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

***†237. Advanced Kinesiotherapy.** Prerequisite: course 137 or consent of instructor. Selected studies in therapeutic exercises. Mr. Morehouse

240. Neural Systems for Motor Control. Prerequisites: course 140 and 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

241. Theories of Voluntary Motor Control. Prerequisites: courses 240 and 250. Exploration and discussion of neural control system for voluntary movement, including alpha-gamma linkage and closed versus open loops. Some attention will be given to neural models for motor learning and memory. Ms. Smith, Ms. Shapiro

M243. Brainstem Control of Rhythmical Movements. (Same as Anatomy M226; lecture is the same as Oral Biology 207, which is for ½ course credit only.) Lecture, 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 is on the interaction among brain stem reflexes, pattern generators and "voluntary" control centers. Mr. Goldberg, Mr. Chandler

250. Behavioral Approach to Motor Control. Prerequisites: course 120, 120L and consent of instructor. An information processing approach to skill acquisition and performance. Particular emphasis on current theories of motor control from the behavioral literature. Ms. Shapiro

255. Social Processes and Motor Behavior. Prerequisite: course 178 or consent of instructor. Influence of social psychological processes on motor behavior with particular attention to the influences of situational variables in the social environment, intrapersonal intervening variables, and the interaction between these external and internal factors on motor behavior. Ms. Scanlan

258. Dimensions of Movement Behavior. Prerequisites: courses 120, 120L, 160; and Education 210A, 210B; or consent of instructor. An exploration of movement behaviors, factors influencing these behaviors, and formulation of hypotheses. Subbehaviors to be considered are expressive movement, movement preferences and communicative movement. Mr. Cratty

260. Motor Development. Prerequisite: course 160. Critical analysis of behavioral approaches in the formulation of motor development theory. Mr. Keogh

262. Movement Disorders. Prerequisite: course 160 or 165 or consent of instructor. Current research in developmental and behavioral aspects of movement disorders. Topics include early identification and intervention, perceptual and cognitive relationships, and evaluation of movement training programs. Mr. Cratty, Mr. Keogh

***1276. Play Theory.** A critical analysis of theoretical propositions explaining the phenomenon of play.

290. Research Issues in Kinesiology. (½ course) Seminar. Prerequisite: consent of instructor. Discussion of current research issues. Topics will be selected by participants in the class. Course 290 may not be used to fulfill any course requirements for the master's or doctoral degrees but may be repeated as necessary. To be graded S/U.

291A-291B-291C.Seminars in Biology of Exercise. (½ to 1 course) Seminar, two to four hours. Prerequisites: courses 207, 208. Selected topics on current issues of the biological aspects of exercise. Students will be required to present a two-hour seminar.

292A-292B-292C. Seminars in Biomechanics. (½ to 1 course) Seminar, two to four hours. Prerequisites: courses 230A, 230B, and consent of instructors. Selected topics in biomechanics of movement. Students will be required to present a two-hour seminar.

M292D. Seminar in Vertebrate Morphology. (½ course) (Same as Biology M261.) Lecture, two hours. Prerequisite: Biology 110 or consent of instructors. Discussion of current problems in vertebrate morphology and evolution. Ms. Peterson, Mr. Zernicke

294A-294B-294C. Seminars in Neuromuscular Control. (½ to 1 course) Seminar, two to four hours. Prerequisites: courses 140 and 118, and either 208 or 240. Selected topics on the muscular and neural determinants of movement behavior. Students will be required to present a two-hour seminar.

295A-295B-295C. Seminars in Movement Development, Learning and Performance. (½ to 1 course) Seminar, two to four hours. Prerequisites: courses 240, 250, 260. Selected topics on current issues in development, acquisition and control of human movement. Students will be required to present a two-hour seminar.

Professional Courses

***1430. Sports Medicine.** Prerequisites: course 130; 132 recommended. A survey of advances in athletic training; etiology and diagnostic techniques relative to rehabilitation and protection from injury in sport; professional and legal aspects of sports medicine.

440. Industrial Kinesiology. Prerequisites: courses 122, 126. Application of the laws and principles of work physiology, biomechanics and ergonomics in making material things fit for human use. Mr. Morehouse

495. Inservice Practicum for Teaching Assistants in Kinesiology. (½ course). Prerequisite: consent of instructor. Supervised practicum in teaching laboratory courses in Kinesiology; material preparation and use of teaching aids. Course required for all teaching assistants. Units do not apply toward degree objectives. Grading S/U basis only.

Individual Study and Research

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Individual Studies for Graduate Students. (½ to 2 courses) Prerequisites: course petition signed by the faculty sponsor, graduate adviser and Graduate Affairs Committee Chair shall be submitted prior to the second week of class. The course section will be identified by a two-letter code using the initials of the faculty sponsor (see department for code). A total of 8 units may be taken for credit; only one course (4 units) will apply toward the minimum graduate course requirement for graduate degrees in Kinesiology. Offered on a letter-graded basis only.

597. Preparation for Master's Comprehensive Examination or the Doctoral Qualifying Examination. (½ course to 4 courses) To be arranged with the faculty member serving as the student's comprehensive examination chair or doctoral committee chair. The course section will be identified by a two-letter code using the faculty member's initials (see department for code). Course 597 may not be used to fulfill any course requirements for the Master's or Doctoral degree but may be repeated as necessary. Graded on a S/U basis.

598. Research for the Preparation of the Master's Thesis. (½ to 4 courses) To be arranged with the faculty member serving as the student's thesis committee chair. The course section will be identified by a two-letter code using the faculty member's initials (see department for code). Course 598 may not be used to fulfill any course requirements for the Master's Degree but may be repeated as necessary. Graded on a S/U basis.

599. Research for and/or Preparation of the Doctoral Dissertation. (½ to 4 courses) The course section will be identified by a two-letter code using the faculty member's initials (see department for code). Course 599 may not be used to fulfill any course requirement for the Ph.D. degree but may be repeated as necessary. Graded on a S/U basis.

Latin American Studies (Interdepartmental)

(Office, 10347 Bunche Hall)

Shirley L. Arora, Ph.D., *Professor of Spanish.*
George Bartholomew, Ph.D., *Professor of Biology.*
Ruben Benitez, Ph.D., *Professor of Spanish.*
Charles F. Bennett, Ph.D., *Professor of Geography.*
C. Rainer Berger, Ph.D., *Professor of Anthropology, Geography and Geophysics.*
Lester Breslow, M.D., M.P.H., *Professor of Public Health.*
William O. Bright, Ph.D., *Professor of Linguistics and Anthropology.*
Henry J. Bruman, Ph.D., *Professor of Geography.*
E. Bradford Burns, Ph.D., *Professor of History.*
Leland S. Burns, Ph.D., *Professor of Urban Planning.*
Robert Burns, S.J., Ph.D., *Professor of History.*
Robert N. Burr, Ph.D., *Professor of History.*
Bertram Bussell, Ph.D., *Professor of Engineering.*
Martin L. Cody, Ph.D., *Professor of Biology.*
Edwin L. Cooper, Ph.D., *Professor of Anatomy.*
Roger Detels, M.D., M.S., *Professor of Public Health.*
Christopher Donnan, Ph.D., *Professor of Anthropology.*
David K. Eiteman, Ph.D., *Professor of Finance.*
Howard Freeman, Ph.D., *Professor of Sociology.*
John Friedmann, Ph.D., *Professor of Planning.*
Juan Gomez-Quiñones, Ph.D., *Professor of History.*
Edward Gonzalez, Ph.D., *Professor of Political Science.*
Derrick B. Jelliffe, M.D., D.T.M., D.C.H., F.R.C.P., *Professor of Public Health and Pediatrics.*
Thomas. J. La Belle, Ph.D., *Professor of Education.*
James Lockhart, Ph.D., *Professor of History.*
Robert H. Mason, Ph.D., *Professor of International Business.*
Clement W. Meighan, Ph.D., *Professor of Anthropology.*
Frank G. Mittelbach, M.A., *Professor of Management and Planning.*
Alfred K. Neumann, M.D., *Professor of Public Health in Residence.*
Park S. Nobel, Ph.D., *Professor of Biology.*
Henry B. Nicholson, Ph.D., *Professor of Anthropology.*
Russell R. O'Neill, Ph.D., *Professor of Engineering.*
Antony R. Orme, Ph.D., *Professor of Geography.*
Carlos P. Otero, Ph.D., *Professor of Spanish and Romance Linguistics.*
Jose Oviedo, Ph.D., *Professor of Spanish.*
Amado M. Padillo, Ph.D., *Professor of Psychology.*
Stanley L. Robe, Ph.D., *Professor of Spanish.*
Milton I. Roemer, M.D., M.P.H., *Professor of Public Health.*
Jonathan D. Sauer, Ph.D., *Professor of Geography.*
C.A. Schroeder, Ph.D., *Professor of Botany.*
Carol Scothorn, M.A., *Professor of Dance.*
Allegra Snyder, M.A., *Professor of Dance.*
Edward W. Soja, Ph.D., *Professor of Planning.*
David Stea, Ph.D., *Professor of Architecture, Urban Design and Urban Planning.*
Robert M. Stevenson, Ph.D., *Professor of Music.*
Norman Thrower, Ph.D., *Professor of Geography.*
Hartmut Walter, Ph.D., *Professor of Geography.*
Johannes Wilbert, Ph.D., *Professor of Anthropology.*
James W. Wilkie, Ph.D., *Professor of History.*
Telford H. Work, M.D., M.P.H., D.T.M.&.H., *Professor of Public Health.*
Maurice Zeitlin, Ph.D., *Professor of Sociology.*
Mildred E. Mathias, Ph.D., *Emeritus Professor of Botany.*
Ichak Adizes, Ph.D., *Associate Professor of Management.*
Theodore Andersen, Ph.D., *Associate Professor of Business, Economics and Finance.*
Alfonso F. Cardenas, Ph.D., *Associate Professor of Engineering.*
Leo Estrada, Ph.D., *Associate Professor of Planning.*
Pierre-Michel Fontaine, Ph.D., *Associate Professor of Political Science.*
John Hawkins, Ph.D., *Associate Professor of Education.*
Henry A. Hespenheide, Ph.D., *Associate Professor of Biology.*
Allen Johnson, Ph.D., *Associate Professor of Anthropology.*
Marvin Karno, M.D., *Associate Professor of Psychiatry.*
Edy Kaufman, Ph.D., *Visiting Associate Professor of Political Science.*
Cecelia Klein, Ph.D., *Associate Professor of Art.*
David Kunzle, Ph.D., *Associate Professor of Art.*
David E. Lopez, Ph.D., *Associate Professor of Sociology.*
Pamela Munro, Ph.D., *Associate Professor of Linguistics.*
Alfred E. Osborne, Ph.D., *Associate Professor of Management.*
David O'Shea, Ph.D., *Associate Professor of Education and Sociology.*
Dwight W. Read, Ph.D., *Associate Professor of Anthropology.*
Richard M. Reeve, Ph.D., *Associate Professor of Spanish (Chair of the Program).*
Hans Schollhammer, M.B.A., D.B.A., *Associate Professor of Management.*

Susan Schrimshaw, Ph.D., *Associate Professor of Public Health.*
Daniel Berry, Ph.D., *Assistant Professor of Engineering.*
Timothy Earle, Ph.D., *Assistant Professor of Anthropology.*
Sebastián Edwards, Ph.D., *Assistant Professor of Economics.*
Margaret FitzSimmons, Ph.D., *Assistant Professor of Architecture and Urban Planning.*
Ralph Frerichs, Ph.D., *Assistant Professor of Epidemiology.*
Susan Hecht, Ph.D., *Assistant Professor of Geography.*
Robert Hill, M.Sc., *Assistant Professor of History.*
Susan Plann, Ph.D., *Assistant Professor of Spanish and Portuguese.*
Jorge Preloran, Ph.D., *Assistant Professor of Theater Arts.*
Antonio Quicoli, Ph.D., *Assistant Professor of Spanish and Portuguese.*
A. John Skirius, Ph.D., *Assistant Professor of Spanish.*
Carlos Velez, Ph.D., *Assistant Professor of Anthropology.*

•

Hector Calderon, Ph.D., *Lecturer in Spanish.*
Jose M. Cruz-Salvadores, M.A., *Lecturer in Spanish.*
Jaime Daza, M.A., *Associate in Linguistics.*
Eduardo Mayone Dias, Ph.D., *Lecturer in Spanish and Portuguese.*
Elsie Ivanlich Dunin, M.A., *Lecturer in Dance.*
Teshome Gabriel, C.Phil., *Lecturer in Theater Arts.*
Carlos Haro, Ph.D., *Lecturer in Education.*
Robert Kreuger, Ph.D., *Lecturer in Spanish.*
Ludwig Lauerhass, Jr., Ph.D., *Lecturer in History.*
Peter R. Nehemkis, L.L.B., *Lecturer in International and Comparative Management.*
Emilio Pulido-Huizar, B.A., *Associate in Dance.*
George L. Voyt, J.D., *Lecturer in Spanish.*

The Master of Arts Degree

Admission Requirements. 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 will be 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 the applicant has been away from school for some time in which case one of the letters may be from an employer.

(2) A minimum of 3.00 or "B" average in the junior-senior years of college.

(3) A statement of purpose discussing the applicant's background in Latin American Studies, proposed program of study, and future career plans.

(4) A minimum score of 1000 on the Combined Verbal and Quantitative Aptitude sections of the Graduate Record Examination (GRE).

(5) A resume or curriculum vitae describing both academic and Latin American experience.

Students are admitted each quarter. Application deadlines are:

Winter Quarter — November 1
Spring Quarter — February 1
Fall Quarter — July 1

Fellowship applications for the academic year are due on January 31 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.

Advising. Academic Programs Office, Latin American Studies, 10347 Bunche Hall, UCLA, Los Angeles, CA 90024. Tel (213) 206-6571.

Academic advising is supervised by the Coordinator of Academic Planning and Student Programs who serves under the direction of the Chair of the Committee to Administer the Interdepartmental Program in Latin American Studies (M.A.). In addition to the Coordinator, who is a teaching member of the Latin American Center, the Office of Academic Programs is staffed by a full-time student affairs coordinator who assists in program counseling, preparation of student petitions, and processing of student records.

Major Fields or Subdisciplines. Students are expected to develop and integrate three fields in Latin American Studies, to be selected from among 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 chosen fields must be a social science.*

Foreign Language Requirements. 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. Since these courses do not count toward the M.A. degree, students are encouraged to pass these proficiency levels by examination. A major Indian language of Latin America may be substituted for either Spanish or Portuguese. Students must fulfill the foreign language requirements by examination or petition for a waiver of the examination if they 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 are 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 falling in each of the three fields.

For the *Thesis Plan* (which requires prior approval), a minimum of 10 courses are required, to be distributed 4-3-3 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 Latin American Studies Courses. Other courses must be petitioned in advance.

Language courses, in contrast with linguistics and literature courses, cannot be applied to the M.A. degree.

Courses numbered in the 300-400 level series are not applicable to the M.A. degree.

Graduate courses may be repeated unless they are of the lecture type.

Comprehensive Examination Plan and Thesis Plan.

Comprehensive Examination Plan. In addition to course requirements, students completing the M.A. degree under the Comprehensive Examination Plan must prepare a research paper on an approved topic that integrates two of the three fields in which coursework has been undertaken.

Prior to their final quarter of coursework, students will choose a 3-member faculty committee responsible for supervising preparation of the research paper. The committee will consist of one professor from each of the student's two preferred disciplines, one of whom will chair the committee, and a third professor from the student's third discipline who will serve as a field observer, or outside reader. Committee members must approve the student's topic in advance and must receive a draft of the research paper at least five weeks prior to the end of the quarter in which the student plans to graduate. After reviewing the draft with the student, committee members will make recommendations for revision and indicate whether the student should proceed to prepare a final draft. The committee members will evaluate the final draft and, if the candidate's work meets the University standards of scholarship, will recommend the award of the M.A. degree. A copy of the research paper is filed in the Academic Programs Office of the Latin American Center.

Thesis Plan. Although students are generally expected to follow the M.A. Comprehensive Examination Plan, in special cases they may be allowed to follow the M.A. Thesis Plan. The Thesis Plan is especially justified when it involves fieldwork or when it is developed in relation to the Latin American Studies Seminar 250 AB.

Students wishing to follow the Thesis Plan must develop a carefully-prepared proposal to be approved by the Academic Coordinator in consultation with the student's faculty committee chair. To be approved, the proposal must provide sound justification for the Thesis Plan, including provisions for funding any planned field research.

Once the Thesis Plan option has been approved, the student will choose a 3-member faculty thesis committee consisting of one professor from each of the student's three disci-

plines, one of whom has already agreed to serve as chair. The thesis committee will work closely with the student in the development, writing, and revision of the thesis and will be responsible for reading, evaluating, and approving the drafts and final version of the student's thesis, ensuring thereby that it meets the University standards of scholarship. Once the final version is approved, the thesis committee recommends the award of the M.A. degree. The thesis is filed with the Graduate Division for deposit in the University Research Library.

Advancement to Candidacy and Award of Degree. By the end of the quarter prior to that of graduation, the student must file for advancement to candidacy with the Graduate Division.

Two positive votes among the 3-member faculty examination committee constitutes a pass on the results. The committee will evaluate the paper in the following terms: Honor Pass (a unanimous vote), Pass, and Fail (majority vote). *No reexaminations are permitted.*

Time to Degree. A full-time student with no deficiencies upon admission can expect to complete all requirements for the M.A. degree within four academic quarters. Students who undertake field research in conjunction with the thesis plan may take up to seven academic quarters.

500 Series Courses. No more than 8 quarter units of 500 series courses may apply toward the total course requirements for the M.A. degree. No more than 4 quarter units of 500 series courses may be applied toward the minimum five graduate level courses for the M.A. degree.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	2-8	S/U	No limit
597	2-8	S/U	Normally only one
598	2-8	S/U	Normally only one

Disqualification. The specific conditions which may lead to termination are: 1) scholarship (failure to maintain a 3.0 average beyond a time determined to be satisfactory by the M.A. committee), or 2) failure to make normal progress toward the degree (e.g., completion of language requirements, courses within the selected fields of concentration, and research for the M.A. project). Recommendations for termination are made by the M.A. committee, acting in consultation with the Academic Coordinator and, when appropriate, the student's M.A. committee. If deemed necessary, the student will then be informed that he/she is to be dropped from the program.

Appeals. A student may appeal termination by submitting a letter to the chair of the M.A. committee stating the reasons why he/she should remain in the program, which the chair will submit to the entire M.A. committee for final consideration.

Other Relevant Information

Articulated and Concurrent Degree Programs. Several options are available to combine the M.A. in Latin American Studies with a professional degree. Upon acceptance by both the Latin American Studies program and the respective professional school, students may pursue both degrees simultaneously. These double degree programs permit students to complete their work in less time than would be required if the degrees were pursued separately. Professionalization options are currently available with the Schools of Education, Engineering, Library and Information Science, Management, Public Health, and Urban Planning.

Individual Doctoral Programs. Students may design an individual doctoral program in Latin American Studies. An explicit proposal must be submitted to the student's M.A. committee for analysis and endorsement, and then be submitted to the Graduate Council for approval.

Certificate of Resident Study for Foreign Students. This certificate may be issued to foreign students who do not seek the M.A. degree but (a) complete at least nine courses in full-time resident study with a grade point average of at least 3.00; (b) conduct satisfactorily a program of organized studies; (c) have a student visa requiring return to home country upon completion of studies in the United States.

Graduate Courses

M200. Latin American Research Resources. (Same as History M265 and Library and Information Science M225.) The course will acquaint students with general and specialized materials in fields concerned with Latin American Studies. Library research techniques will 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 course will acquaint students with the contemporary statistical materials important for research in Latin American Studies. Discussion will focus 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.

M232. Disease Problems of Socio-Economic and Political Impact in Latin America. (Same as Public Health M232.) Prerequisite: consent of instructor. A graduate course for students with knowledge of the geography and social and political systems for the diverse nationalities which constitute Latin America. The focus will be on important disease problems in respect to their social, economic and political impact on Latin American countries with only a minimum of medical and technical details necessary to understand the nature of the disease as it afflicts individuals and populations. Mr. Work

M250A. Indians of South America. (Same as Anthropology M272). Prerequisite: consent of instructor. Survey of the literature and research topics related to Indian cultures of South America. This course may be repeated for credit. Mr. Wilbert

250B. Interdisciplinary Seminar in Latin American Studies. Prerequisites: consent of instructor. Problem-oriented on critical areas stressed in the University's cooperative programs in Latin America.

250C. Interdisciplinary Topics in Latin American Studies. Prerequisite: consent of instructor. A seminar devoted to selected topics of an interdisciplinary nature. Normally, a reading knowledge of the Spanish or Portuguese language is essential.

Individual Study and Research

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus Instructor, Department Chairman, and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Study or Research. The course section will be identified by a two-letter code using the initials of the faculty sponsor (see department for code). A total of 8 units may be taken for credit; only one course (4 units) will apply toward the minimum graduate course requirement for graduate degrees in Kinesiology. Offered on a letter-graded basis only.

597. Preparation for the Comprehensive Examination for the Master's Degree. This course is ordinarily taken only during the quarter in which the student is being examined. A grade of Satisfactory (S) or Unsatisfactory (U) will be assigned by the Committee on the basis of the student's performance.

598. Research for and Preparation of the Master's Thesis. A grade of Satisfactory (S) or Unsatisfactory (U) will be assigned by the professor supervising the master's thesis. Only one course may apply toward the minimum course requirement for the degree.

Latin American Social Sciences Courses

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.
*132. Technology and Environment.
*138. Methods and Techniques of Ethno-History.
*150. Comparative Society.
*161. Development Anthropology.
*163. Women in Culture and Society.
*166. Comparative Minority Relations.
*167. Urban Anthropology.
173P. Cultures of Middle America.
173Q. Latin American Communities.
174P. Ethnograaphy of South American Indians.
*212P. Selected Topics in Hunter-Gatherer Societies.
*214. Selected Topics in Prehistoric Civilizations of the New World.
*M216. Dating Techniques in Environmental Sciences and Archaeology (same as Geography M278).
*218. Historical Reconstruction and Archaeology.
*230P. Ethnology.
233P. Symbolic Anthropology.
*239P. Selected Topics in Field Training in Ethnography.
*239Q. Analysis of Field Data.
*240. Seminar in Language and Culture.
243Q. Afro-American Sociolinguistics: Black English.
*M247A. Ethnographic Film (same as Theatre Arts M209C).
*253. Economic Anthropology.
*260. Urban Anthropology.
*261. Comparative Minority Relatiofns.
*M267B. Seminar in Ethnographic Film (same as Theatre Arts M209C).
272. Indians of South America.
*282. Research Design and Cultural Anthropology.

Archaeology *200. Archaeology Colloquium.
*259. Field Work in Archaeology.

Economics 110. Economic Problems of Underdeveloped Countries.

111. Theories of Economic Growth and Development.
112. Policies for Economic Development.
*120. Introduction to Urban and Regional Economics.
*190. International Economics.
*191. International Trade Theory.
*192. International Finance.
211. Economic Development.
212. Applied Topics in Economic Development.
213. Selected Problems of Underdeveloped Areas.
*221-222. Urban and Regional Economic Analysis (I and II).
*291. International Trade Theory.
*292. International Finance.
*293. International Economics: Selected Topics.
Folklore M149. Folk Literature of the Hispanic World (same as Spanish M149).
*201A-201B. Folklore Collecting and Field Research.
248. Theory and Method in Latin American Folklore Studies.
M249. Hispanic Folk Literature (same as Spanish M249 and Portuguese M249).
M286B. Studies in Hispanic Folk Literature: Narrative and Drama (same as Spanish M286B).
M286C. Studies in Hispanic Folk Literature: Ballad, Poetry, and Speech (same as Spanish M286C).
Geography 121. Conservation of Resources: Underdeveloped World.
181. Middle America.
182B. Brazil.
*251. Seminar: Urban Geography.
*M278. Dating Techniques in Environmental Sciences and Archaeology (same as Anthropology M216).
281. Middle America.
282. South America.
292. Advanced Regional Geography: Selected Regions.
History 8A. Latin America: Reform and Revolution.
8B. Latin American Social History.
159A-159B. History of the Chicano People.
165A-165B. Colonial Latin America.
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.
170. Latin American Cultural History.
171. The Mexican Revolution Since 1910.
173. Modern Brazil.
174. Brazilian Intellectual History.
197. Undergraduate Seminars.
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.
268A-268B. Seminar in Recent Latin American History.
Latin American Studies 197. Interdisciplinary Topics in Latin American Studies.
M200. Research Resources for Latin American Studies (Same as History M200).
250A-B. Enculturation in Latin America.
250C. Interdisciplinary Topics.
Philosophy *190. Third World Political Thought.
Political Science *119A-119Z. Special Studies in Political Theory.
131. Latin American International Relations.
*139A-139Z. Special Studies in International Relations.
*146. Political Behavior Analysis.
*149A-149Z. Special Studies in Politics.
163A-163B. Government and Politics in Latin America.
*167. Ideology and Development in World Politics.
*169A-169Z. Special Studies in Comparative Government.
*183. Administration of International Agencies and Programs.
*188A. Comparative Public Administration.
*188B. Comparative Urban Government.
*189. Special Studies in Public Administration.
*191. Urban and Regional Planning and Development.
197B. Seminar in International Relations.
*218A. Public Administration and Democratic Government.
*224A. Politics and Economy.
*M229. Urban Government (same as Architecture M205C.)
*230. Comparative Development Adminstration.
*231D. International Relations Theory.
*235. Selected Topics in Comparative Government.
250A. Seminar in Regional and Area Political Studies: Latin American Studies.
*253. Seminar in International Relations.
*256A-256B. Seminar in Comparative Government.
Sociology *120. Social Change.
*123. Social Stratification.
*126. Social Demography.
131. Latin American Societies.
140. Political Sociology.
*235. Social Structure and Social Movements.
*259. Social Structure and Economic Change: Historical and Comparative Perspectives.
*263. Social Stratification.
*292A-292B-292C. Research Development.

Language Courses

Spanish *[11] 1. Elementary Spanish.
*[11]1G. Reading Course for Graduate Students (no credit).
2. Elementary Spanish.
2G. Reading Course for Graduate Students (no credit).
3. Elementary Spanish.
4. Intermediate Spanish.
5. Intermediate Spanish.
25. Advanced Spanish.
M44. Civilization of Spanish America and Brazil (same as Portuguese M44).
100. Phonology and Pronunication.
*105. Intermediate Composition.
*109. Advanced Composition.
Portuguese *[11]1. Elementary Portuguese.
2. Elementary Portuguese.
3. Intermediate Portuguese.
25. Advanced Portuguese.
M44. Civilization of Spanish America and Brazil (same as Spanish M44).
100. Phonology and Pronunciation.
*101A. Advanced Reading and Conversation.
*101B. Advanced Composition and Style.
102A-102B. Intensive Portuguese.
Indigenous Languages of Latin America *[11]118A-118B-118C. Elementary Quechua.

Linguistics Courses

Anthropology 240. Seminar in Language and Culture.
M243Q. Afro-American Sociolinguistics: Black English.
Linguistics *100. Introduction to Linguistics.
*103. Introduction to General Phoenetics.
120A. Linguistic Analysis: Phonology.
*120B. Linguistic Analysis: Grammar.
*165A. Linguistic Theory: Phonology.
*165B. Linguistic Theory: Grammar.
*210A. Field Methods I.
*210B. Field Methods II.
*220. Linguistic Areas.
*225. Linguistic Structures.
Spanish *103. Syntax.
*115. Applied Linguistics.
*M118. History of the Spanish and Portuguese Languages (same as Portuguese M118).
*M203A-203B. Development of the Spanish and Portuguese Languages (same as Portuguese M203A-203B).
*204A-204B. Transformational Grammar.
206. Linguistics.
*209. Dialectology.
*256A. Studies in Linguistics.
*256B. Studies in Dialectology.
Portuguese *103. Syntax.
*M118. History of the Portuguese and Spanish Languages (same as Spanish M118).
*M203A-M203B. Development of the Portuguese and Spanish Languages (same as Spanish M203A-M203B).

Literature Courses

Spanish 121A-121B. Survey of Spanish American Literature.
137. The Literature of Colonial Spanish America.
139. 19th Century Spanish American Literature.
141. Mexican Literature.
142A. Spanish American Literature in the 20th Century: Poetry and Drama.
142B. Spanish American Literature in the 20th Century: Fiction and the Essay.
M149. Folk Literature of the Hispanic World (same as Folklore M149).
151. Folk Song in Spain and Spanish America.
*[11]160B. Hispanic Literature in Translation: Spanish America and Brazil.
M200. Bibliography (same as Portuguese M200).
237. Chroniclers of the Americas.
239. Neo-Classic and Romantic Prose and Poetry in Spanish America.
240. The Modernist Movement.
243. Contemporary Spanish American Poetry.
244. Contemporary Spanish American Novel and Short Story.
245. Contemporary Spanish American Essay.
246. Contemporary Spanish American Theater.
M249. Hispanic Folk Literature (same as Folklore M249 and Portuguese M249).
277. Studies in Colonial Spanish American Literature.
278. Studies in 19th Century Spanish American Literature.
280A. Studies in Contemporary Spanish American Literature: Modernist Poetry.
280B. Studies in Contemporary Spanish American Literature: Post-Modernist Poetry.
280C. Studies in Contemporary Spanish American Literature: Novel and Short Story.
280D. Studies in Contemporary Spanish American Literature: The Essay.
M286B. Studies in Hispanic Folk Literature: Narrative and Drama (same as Folklore M286B).
M286C. Studies in Hispanic Folk Literature: Ballad, Poetry and Speech (same as Folklore M286C).

Portuguese 121A-121B. Survey of Brazilian Literature.

C127. Colonial Brazilian Literature.

C129. Romanticism in Brazil.

C135. Naturalism, Realism and Parnasianism in Brazil.

C137. Contemporary Brazilian Literature.

C243A. Colonial Literature.

C243B-C243C. Romanticism in Brazil.

M249. Hispanic Folk Literature (same as Folklore M249 and Spanish M249).

253A. Special Studies in Brazilian Literature: Prose Fiction.

253B. Special Studies in Brazilian Literature: The Poetry.

253C. Special Studies in Brazilian Literature: The Theater.

Fine Arts Courses

Art 117A. Advanced Studies in Pre-Columbian Art: Mexico.

117B. Advanced Studies in Pre-Columbian Art: Central America.

117C. Advanced Studies in Pre-Columbian Art: The Andes.

118B. The Arts of Pre-Columbian America.

220. The Arts of Africa, Oceania and Pre-Columbian America.

Dance *[11]71J. Dance of Mexico (½ course).

146. Dance in Latin America.

171J. Dance of Mexico (½ course).

*226A-226E. Dance Expressions in Selected Cultures.

Music *[11]81K. Music and Dance of Mexico (½ course).

131A-131B. Music of Hispanic America.

157. Music of Brazil.

*190A-190B. Proseminar in Ethnomusicology.

*280. Seminar in Ethnomusicology.

Theater Arts 106C. History of African, Asian and Latin American Film.

*112. Film and Social Change.

*M209C. Seminar in Ethnographic Film (same as Anthropology M247A).

*298A-298B. Special Studies in Theater Arts.

Professional Courses

***Architecture and Urban Planning.** 232. Spatial Planning: Regional and International Development.

234. Seminar in Spatial Development Policy.

235A-235B. Regional Approaches to National Development.

236A-236B. Urban and Regional Economic Development.

239. Special Topics in Urban-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.

204G. Planning Educational Language Policy Internationally.

*207. Politics and Education.

*253A. Seminar: Current Problems in Comparative Education.

253D. Seminar: Latin American Education.

*253F. Seminar: Education in Revolutionary Societies.

Law *270. International Law.

*271. International Business Transactions.

275. Law and Development in Latin America.

340. Individual Research.

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.

Management 205A. International Business Economics.

205B. Comparative Market Structure and Competition.

205C. Business Forecasting for Foreign Economics.

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 M115. Disease Problems of Socio-Economic and Political Impact in Latin America (same as Latin American Studies M155).

*161. Nutrition and Health (½ course)

*173. Population, Ecology and Health.

174E. Health, Disease, and Health Services in Latin America.

*181. Introduction to Social Research Methods in Health.

*186. The World's Population and Food.

*214. Infectious and Tropical Disease Epidemiology.

*216A. Ecology of Exotic Diseases.

*222. Seminar in Epidemiology.

*240. Health Care Issues in International Perspective.

*260E-260G. Advanced Nutrition. (½ course each)

260H. Advanced Nutrition.

*262. Seminar in Nutrition (½ course).

*271. Medical Anthropology.

*272. Seminar on Current Issues in Maternal and Child Health (½ course).

*M274A-M274B-M274C. Seminar in Population Policy and Fertility (same as Sociology M287A-M287B-M287C).

*405. Demographic Materials and Methods.

*470A. International Health Agencies and Programs.

*470B. Issues in International Health Administration.

*476. Human Reproduction in Cross-Cultural Perspective.

*479. Nutrition Programs and Policies for Families in the Third World.

*596. Directed Individual Study or Research.

*Special courses which may be applied to the M.A. degree requirements by advance departmental approval. These courses do not have any exclusive focus on Latin America but provide an opportunity for the student to relate a particular perspective or phenomenon to Latin America.

Law

(Office, 1224 Law Building)

Benjamin Aaron, A.B., LL.B., *Professor of Law.*
Richard L. Abel, A.B., LL.B., Ph.D., *Professor of Law.*
Norman Abrams, A.B., J.D., *Professor of Law.*
Reginald H. Alleyne, Jr. B.S., LL.B., LL.M., *Professor of Law.*
Alison Grey Anderson, B.A., J.D., *Professor of Law.*
Michael R. Asimow, B.S., LL.B., *Professor of Law.*
John A. Bauman, B.S.L., LL.B., LL.M., Jur.Sc.D., *Professor of Law.*
David A. Binder, A.B., LL.B., *Professor of Law.*
Grace G. Blumberg, B.A., J.D., L.L.D., *Professor of Law.*
Barbara E. Brudno, B.A., M.A., J.D., *Professor of Law.*
Richard Delgado, A.B., J.D., *Professor of Law.*
Jesse J. Dukeminier, A.B., J.D., *Professor of Law.*
Theodore Eisenberg, A.B., J.D., *Professor of Law.*
George P. Fletcher, B.A., J.D., M.C.L., *Professor of Law.*
Carole E. Goldberg-Ambrose, B.A., J.D., *Professor of Law.*
Kenneth W. Graham, Jr., B.A., J.D., *Professor of Law.*
Donald G. Hagman, B.S., LL.B., LL.M., *Professor of Law.*
Harold W. Horowitz, A.B., LL.B., LL.M., S.J.D., *Professor of Law.*
Edgar A. Jones, Jr., A.B., LL.B., *Professor of Law.*
Robert L. Jordan, A.B., LL.B., *Professor of Law.*
Kenneth L. Karst, A.B., LL.B., *Professor of Law.*
William A. Klein, A.B., LL.B., *Professor of Law.*
James E. Krier, B.S., J.D., *Professor of Law.*
Leon Letwin, Ph.B., LL.B., LL.M., *Professor of Law.*
Wesley J. Liebeler, B.A., J.D., *Professor of Law.*
Henry W. McGee, Jr., B.S., J.D., LL.M., *Professor of Law.*
William M. McGovern, Jr., A.B., LL.B., *Professor of Law.*
David Mellinkoff, A.B., LL.B., *Professor of Law.*
Herbert Morris, A.B., LL.B., D.Phil. (Oxon.), *Professor of Law and Philosophy.*
Melville B. Nimmer, A.B., LL.B., *Professor of Law.*
Susan Westerberg Prager, A.B., M.A., J.D., *Associate Dean and Professor of Law.*
Monroe E. Price, B.A., LL.B., *Professor of Law.*
George L. Priest, B.A., J.D., *Professor of Law.*
Joel Rabinovitz, A.B., LL.B., *Professor of Law.*
Arthur I. Rosett, B.A., LL.B., *Professor of Law.*
Gary T. Schwartz, B.A., J.D., *Professor of Law.*
Murray L. Schwartz, B.S., LL.B., LL.D., *Professor of Law.*
Steven H. Shiffrin, B.S., J.D., *Professor of Law.*
Stanley Siegel, B.S., J.D., *Professor of Law.*
James D. Sumner, Jr., A.B., LL.B., LL.M., J.S.D., *Professor of Law.*
Jonathan D. Varat, B.A., J.D., *Professor of Law.*
William D. Warren, A.B., J.D., J.S.D., *Professor of Law.*
Stephen C. Yeazell, B.A., M.A., J.D., *Professor of Law.*
Richard C. Maxwell, B.S.L., LL.B., *Emeritus Connell Professor of Law.*
Rollin M. Perkins, A.B., J.D., J.S.D., *Emeritus Connell Professor of Law.*
Ralph S. Rice, B.S., J.D., LL.M., *Emeritus Connell Professor of Law.*
Harold E. Verrall, A.B., M.A., LL.B., J.S.D., *Emeritus Professor of Law.*
Kenneth H. York, A.B., LL.B., *Emeritus Professor of Law.*
Gerald Lopez, B.A., J.D., *Acting Professor of Law.*
Daniel H. Lowenstein, A.B., LL.B., *Acting Professor of Law.*
Carrie J. Menkel-Meadow, A.B., J.D., *Acting Professor of Law.*

•

Paul B. Bergman, B.A., J.D., *Senior Lecturer in Law.*
Charles M. Firestone, B.A., J.D., *Adjunct Professor of Law.*
Rowan K. Klein, B.A., J.D., *Adjunct Professor of Law.*
Michael Rappaport, B.S., J.D., *Lecturer in Law.*

The School of Law offers a 3-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 become applicants 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. In addition to the courses in the regular Law School curriculum, students may take two courses for credit in other disciplines in the University. Concurrent degree programs are available for qualified law students with the Graduate Schools of Management and of Architecture and Urban Planning.

The Law School program also 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 Law School which seek to analyze and expand upon the agency experience. The School also offers an extern program which gives the 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, D.C., Alaska, Hawaii and on Indian reservations.

Admission

Students beginning their professional work are admitted only in the Fall. Applicants must have received the baccalaureate degree from a university or college of approved standing prior to the time at which they begin their work in the Law School. Applicants are also required to take the Law School Admission Test. The Admissions committee considers grades and test scores, and, in appropriate cases, such additional factors as racial/ethnic background; ability in languages other than English; work experience or career achievement; previous positions of leadership or other special achievements; prior community or public service; unusual life experiences; physical handicap or other disadvantage overcome; career goals; economic disadvantages; and any other characteristic which may indicate that the applicant will contribute to the educational and other benefits of a diversified student body.

Applicants interested in further information about the academic programs offered by the School of Law may obtain the *Announcement of the School of Law* by contacting the Admissions Office, School of Law (213) 825-2080.

Library and Information Science

(Office, 120 Powell Library Building)

Harold Borko, Ph.D., *Professor of Library and Information Science.*
Richard K. Gardner, Ph.D., *Professor of Library and Information Science.*
Robert M. Hayes, Ph.D., *Professor of Library and Information Science (Dean of the School).*
Russell Shank, D.L.S., *Professor of Library and Information Science.*
Robert Vosper, M.A., LL.D., *Professor of Library and Information Science.*
Page Ackerman, B.A., B.S.L.S., *Emeritus Professor of Library and Information Science.*
Robert L. Collison, B.A., F.L.A., *Emeritus Professor of Library and Information Science.*
Andrew H. Horn, Ph.D., *Emeritus Professor of Library and Information Science.*
Seymour Lubetzky, M.A., LL.D., *Emeritus Professor of Library and Information Science.*
Lawrence Clark Powell, Ph.D., Litt.D., L.H.D., H.H.D., *Emeritus Professor of Library and Information Science.*
Raymund F. Wood, Ph.D., *Emeritus Professor of Library and Information Science.*
Marcia J. Bates, Ph.D., *Associate Professor in Library and Information Science.*
Elaine Svenonius, Ph.D., *Associate Professor of Library and Information Science.*
Diana M. Thomas, Ph.D., *Associate Professor of Library and Information Science.*
Dorothy J. Anderson, Ph.D., *Assistant Professor of Library and Information Science.*
William H. Fisher, Ph.D., *Assistant Professor of Library and Information Science.*
Roger C. Palmer, Ph.D., *Assistant Professor of Library and Information Science.*
John V. Richardson, Ph.D., *Assistant Professor of Library and Information Science.*
Elizabeth R. Baughman, M.L.S., M.A. *Senior Lecturer in Library and Information Science.*
Elizabeth R. Eisenbach, M.L.S., *Senior Lecturer in Library and Information Science.*
Betty Rosenberg, M.A., *Emeritus Senior Lecturer in Library and Information Science.*

•

Several members of the Library Profession of the community and the University serve as part-time faculty in the School with responsibility for some of the specialized courses.

Joseph Becker, M.S.L.S., *Adjunct Professor of Library and Information Science.*
Patricia Chittenden, M.L.S., *Visiting Lecturer in Library and Information Science.*
Deborah Costa, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Louise Darling, M.A., *Adjunct Professor of Library and Information Science.*
Thomas Fry, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Frank Houdek, J.D., M.L.S., *Visiting Lecturer in Library and Information Science.*
Teresa L. Jacobsen, M.S.L.S., *Adjunct Lecturer in Library and Information Science.*
Mona M. McCormick, M.L.S., *Adjunct Lecturer in Library and Information Science.*
James V. Mink, M.A., *Adjunct Lecturer in Library and Information Science.*
Constance W. Nyhan, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Marion Peters, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Teresa Portilla, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Mary I. Purucker, M.L.S., *Visiting Lecturer in Library and Information Science.*
William J. Speed, M.A., *Visiting Lecturer in Library and Information Science.*
Thomas Dan Tonkery, M.S., *Adjunct Lecturer in Library and Information Science.*
Marie Waters, M.L.S., *Adjunct Lecturer in Library and Information Science.*
Gloria Werner, M.L., *Adjunct Lecturer in Library and Information Science.*
Binnie Wilkin, M.S., *Visiting Lecturer in Library and Information Science.*
Joy E. Williams, Ph.D., *Adjunct Lecturer in Library and Information Science.*

Representatives of Other Departments on the Faculty of the Graduate School of Library and Information Science.

Arthur M. Cohen, Ph.D., *Professor of Education.*
Jerome Cushman, A.B., B.S.L.S., *Senior Lecturer in English.*
Robert Starr Kinsman, Ph.D., *Professor of English.*
Michel A. Melkanoff, Ph.D., *Professor of Engineering.*
Richard H. Rouse, Ph.D., *Professor of History.*

Information and Application Materials

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. Specific inquiries may be directed to the Graduate Adviser, Mrs. Constance Nyhan, or the Assistant Graduate Adviser, Mrs. Terry Jacobsen.

The Master of Library Science Degree (M.L.S.)

Admission Requirements. Applicants must comply with Graduate Division requirements (i.e., an acceptable bachelor's degree, a 3.0 grade point average for the last two years of undergraduate and any postbaccalaureate study) and application procedures. In addition, the School requires:

(1) A statement of purpose.

(2) A curriculum vitae on the form 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. Applicants must have passed the General Aptitude Test of the Examination with a minimum combined score (Verbal and Quantitative) of 900. The Examination must have been completed within five years prior to application for admission.

(5) Three letters of recommendation.

(6) Satisfaction of the following entrance requirements:

(a) Reading knowledge of one or two foreign languages. In the case of one foreign language, the requirement may

be met by completing five quarters or four semesters of study of the language with minimum grades of C, or by passing the Graduate School Foreign Language Test (GSFLT) with a minimum score of 500. In the case of two foreign languages, the requirement may be met by completing either three quarters or two semesters of study of each language with minimum grades of C. The School will accept the passing of a foreign language test administered by another UCLA department and satisfying its degree requirements, provided the test was taken prior to admission to the School or is taken as part of a coordinated degree program involving the School and that department.

(b) Statistics. The requirement is satisfied by the completion of a college level course with a minimum grade of C.

(c) Computer programming. The requirement is met either by completing a college level course with a minimum grade of C, or by passing a proficiency examination administered by the School.

The Dean may temporarily waive one or more of these requirements, subject to completion of all of them by the end of the third quarter of residence, but applicants seeking such a delay should realize that the School's regular course requirements are such that completion of these entrance requirements represent a serious overload for the new student.

Applicants not meeting the grade point average of 3.0 may be admitted in exceptional cases if their GRE scores, letters of recommendation, or other factors indicate unusual promise. While work experience is not a requirement for admission, consideration will be given to such experience in reviewing the total application. Admission is for Fall Quarter only.

Advising. Upon being accepted into the School, each student is assigned a faculty member for initial counseling and direction. Normally, the student retains this faculty member as an interim counselor for a year or less, until such time as a regular faculty adviser is selected, based on the student's interest and specialization. Once chosen, the faculty adviser is in charge of the student's specialization paper, and gives specific academic advice in matters pertaining to the student's specialization, independent study, and related matters.

Course Requirements. The following are the established requirements for graduation from the School's M.L.S. program:

Coursework. The School requires coursework to provide evidence both of basic professional competencies and of knowledge in a field of specialized competence. As a result, the School normally requires each student to enroll in three courses per quarter in order to complete the program in six quarters. Part-time enrollment is permitted if it is endorsed by the employer of a student working in a library or information center.

Basic Professional Competence. The requirement is met by completion of nine specified courses (400, 402, 404, 410, 411, 420, 421, 430, 441). In certain cases, prior coursework or work experience may be sufficient to justify replacing a course by a validation exam, administered by the School, but this is not encouraged and should be used only for the purpose of increasing the extent to which the student pursues a specialization.

Only in unusual cases will librarianship coursework taken elsewhere satisfy the basic competency requirements. Persons with considerable library coursework taken elsewhere are advised to consider other means for completion of their degree objectives.

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 is ordinarily met by the completion of nine additional courses in the School and/or in other departments.

During the second year, the student 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 counted as part of the 18 required courses. The amount of coursework required will depend upon the relevant experience and graduate study completed by the student prior to admission to the School. Reducing the number of courses to less than nine, however, requires that the student, jointly with the faculty adviser, identify exactly what courses from prior academic work are applicable to the chosen area of specialization. A petition must then be submitted to the faculty for approval.

Comprehensive Examination Plan. A written Comprehensive Examination, which is offered fall, winter, and spring quarters, is required. The Comprehensive Examination Committee is appointed by the Dean with the approval of the Executive Committee of the Faculty. The examination is designed to demonstrate the student's 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.

The student is expected to demonstrate an understanding of the interrelated nature of all of the competencies when confronted with a major issue of concern in the field.

Specialization paper. In order to be eligible to take the Comprehensive Examination, the student first must complete a Specialization Paper, which is an in-depth examination of a problem in the student's chosen area of specialization. It should reflect the student's competence by showing an understanding of the place and significance of a specific problem in relationship to the entire field of specialization. It should represent *new* work and/or analysis in the problem area, but it does not have to represent an original approach. It ought to be well enough written and on a topic of enough interest to be considered for publication or distribution.

Time to Degree. The M.L.S. is a 2-year program, consisting normally of three 4-unit courses each quarter during six consecutive academic quarters, for a total of 18 courses. Those students who are permitted to enroll part-time will necessarily take a longer time to obtain the degree.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading
501	2-8	S/U
596	4	S/U

No more than 8 quarter units may apply to the total course requirement, with not more than 4 units counting toward the minimum requirements of the Graduate Division.

In order to enroll in any S/U graded course, including 500 series courses, the student must be in good academic standing.

Disqualification and Appeal of Disqualification. Termination of graduate status may be recommended if the student fails to maintain substantial progress toward completion of the degree; or if the cumulative grade point average falls below a 3.0 or, if the work in any two consecutive quarters falls below a 3.0 average; or failure on the Comprehensive Examination on two successive tests. Such a recommendation is made by the Executive Committee of the Faculty based on the advice of the student's faculty adviser and the Dean. The Dean will notify the student in writing of the decision together with the reasons for it. Appeals of such actions may be made by formal petition to the faculty by the student.

Cooperative Degree Program. The GSLIS and other schools and departments of the University sponsor programs whereby students may obtain two degrees in less time than would be required if the degrees were pursued separately. To participate in a cooperative program, the applicant must make application to and be admitted by both GSLIS and the other UCLA school or department. Fulfilling the combined set of program requirements normally takes three years.

Cooperative program options include:

(1) M.L.S./M.A. Latin American Studies Program — an articulated degree program of the GSLIS and the Interdepartmental Committee for Latin American Studies.

(2) M.L.S./M.B.A. — a concurrent degree program offered by GSLIS and the Graduate School of Management.

(3) M.L.S./M.A. History — a concurrent degree program offered by GSLIS and the Department of History.

The Certificate of Specialization Program

The Certificate of Specialization Program meets the need for specialized training in various areas of librarianship, information science, and bibliography, as well as research competence, especially in specialized fields.

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 ALA accredited school, and unconditional admission to graduate status by the UCLA Graduate Division.

A student's course program may begin in any quarter of the academic year. If a student is admitted for a preliminary quarter to complete prerequisite courses, the preliminary quarter will not be counted in the minimum residence requirements.

Meeting the specified requirements for a field of specialization does not automatically assure admission to the program. Candidates are selected from qualified applicants based on relevance of education and/or experience and the suitability of the available course of instruction to the objectives of the applicant.

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, will be 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. A research paper, bibliographical study, or literature survey appropriate for publication (in a professional or scholarly journal or as a separate paper) must be completed in the final quarter of study, in connection with enrollment in LS 596, "Directed Individual Study or Research." To remain in graduate status, students must maintain a grade point average of 3.0 (i.e., B). No time limits are set for the completion of the requirements for the Certificate.

The Ph.D. Degree

Admission Requirements. Applicants must comply with Graduate Division requirements (i.e. an acceptable bachelor's degree, a 3.0 grade point average for the last two years of undergraduate study and any post-baccalaureate study) and application procedures. In addition, the School requires:

(1) A master's degree or equivalent in an academic or professional field of study from an institution of recognized standing, representing academic preparation equivalent to that required for a comparable degree from the University of California.

(2) Basic Professional Competence. Evidence of basic professional competence is required. This would be satisfied by an M.L.S. degree from a program accredited by the American Library Association. Alternatively, it could be satisfied by completion of nine specified courses (400, 402, 404, 410, 411, 420, 421, 430, 441) taken in the School.

(3) Satisfaction of the following entrance requirements:

(a) Reading knowledge of one or two foreign languages. In the case of one foreign language, the requirement may be met by completing five quarters or four semesters of study of the language with minimum grades of C, or by passing the GSFLT with a minimum score of 500. In the case of two foreign languages, the requirement may be met by completing either three quarters or two semesters of study of each language with minimum grades of C. Special foreign language competence, beyond that specified for the M.L.S. degree, will be individually determined on the basis of the student's proposed area of specialization.

The School will accept the passing of a foreign language test administered by another UCLA department and satisfying its degree requirements, provided the test was taken prior to admission to the School or is taken as part of a coordinated degree program involving the School and that department.

(b) Statistics. The requirement is satisfied by the completion of a college level course with a minimum grade of C.

(c) Computer programming. The requirement is met either by completing a college level course with a minimum grade of C, or by passing a proficiency examination administered by the School.

(4) A statement of purpose which identifies the applicant's proposed area of specialization, accompanied by appropriate evidence of qualifications for pursuing a doctoral program in it. It should be as specific as possible so that it can be used to determine whether the specializations provided by the School's doctoral program are appropriate to the applicant's needs.

(5) Total score of 1200 or more on the 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 from persons qualified to evaluate the candidate's ability to succeed in advanced graduate study.

(7) Interviews with two faculty members of the School, usually jointly as a panel (or with two people designated as representatives for the School if it is not possible for the applicant to visit the School).

(8) A curriculum vitae on the form provided in the School's *Announcement*.

Work Experience in Libraries. While work experience in a library is not a requirement for admission, consideration will be given to such experience in evaluation of candidates.

Advising. Upon admission to the School, a temporary faculty adviser will be assigned based on the evidence in the student's statement of interest at the time of application and on the general commitments of the faculty. The student is expected to choose a regular adviser no later than the end of the first year in the School.

The adviser has the responsibility to assist the student in planning a program of study that meets the requirements of the Ph.D. program and to guide the student in the dissertation research.

Until the student is advanced to candidacy, there will be yearly formal evaluations of progress that involve the student, the Dean, the faculty adviser, and other faculty. After advancement to candidacy, the evaluation of progress is the responsibility of the formal doctoral committee.

Major Fields and Subdisciplines. General Fields of Emphasis. Each candidate will be expected to specialize in a subfield in one of three major fields:

(1) Selection, acquisitions, identification, preservation, and collection development of information materials.

(2) Storage, retrieval, interpretation, dissemination, and utilization of information content of those materials.

(3) Administration and management of libraries and information centers.

The School strictly limits the specific subfields which, at any given point in time, will be accepted for doctoral work.

Course Requirements. There are no required courses in the program, but courses or their equivalent are required for admission.

Written and Oral Qualifying Examinations. There will be four Written Qualifying Examinations, in each of the following areas of study:

Librarianship, covering the aspects of the library as an institution — international comparison, administration and management, governing legislation, the social context of libraries and information services, interinstitutional cooperation, special aspects of various types of libraries (public, academic, school, special), the needs of constituencies, the profession, the economics of library operation and service.

Bibliography, covering the aspects of the library as a collection of books and other forms

of recorded information, including evaluation, selection and acquisitions of such materials, description and bibliographical control of them, storage and physical control of them.

Information Science, covering the aspects of the library, as a collection of information — reference, formal (computer) techniques for retrieval, information systems analysis and design, the economics of information distribution.

History, covering the growth of library and information science — the history of printing, bookmaking, and publishing, the history of libraries, the history of intellectual access to information.

These will be scheduled during one week in a quarter. Each examination is expected to require one full day for completion. If the student fails to pass one or two of the sections of the 4-part examination, they may be repeated. Should the student fail three sections, *all four must be repeated.*

The Oral Qualifying Examination: Preparation and Defense of the Dissertation Proposal. The second formal requirement of the program is that the student prepare and defend in an Oral Qualifying Examination an extensive dissertation proposal. The proposal must contain (a) an introduction to the problem to be studied and its general context, (b) a review of the relevant literature, (c) a description of the methodology to be used, and (d) a time schedule of work to be done for completion.

Students are encouraged to start work on their proposals while taking courses in preparation for the Written Qualifying Examination. The proposal should, in most cases, be completed at the same time or soon after the completion of the written examination, but it must be completed and accepted within two years after passing the Written Qualifying Examination.

The proposal must be reviewed and formally accepted at an Oral Qualifying Examination by a committee consisting of at least five members, two of whom are from outside the School. The student's adviser chairs the meeting. At least two weeks in advance, the student must schedule the Oral Qualifying Examination with his/her committee and provide each member of the committee with a reading copy of the proposal and have one additional copy available.

During the Oral Qualifying Examination, the committee is expected to require the candidate to evaluate the significance of the chosen topic of research, to justify the methodology to be used, to demonstrate the feasibility of completing the research and to provide criteria for evaluating whether the research has been completed.

During the Oral Qualifying Examination, the committee is expected to test the candidate's knowledge in the specific field chosen for the dissertation research by detailed questions concerning the literature and problem areas within the field. However, the coverage in the oral examination is not necessarily limited to the dissertation topic; it may cover other areas of the field as well.

The committee must decide, by majority vote after the Oral Qualifying Examination, whether the proposal as written is accepted, the proposal with modification is accepted, or the proposal is not accepted.

The committee must also decide, by majority vote, whether the Oral Qualifying Examination has been passed, but if the proposal is not accepted, the Oral Qualifying Examination may not be passed.

Dissertation Research and Final Oral Exam. The third formal requirement of the program is that the student research, write and defend a dissertation. The student should work closely with the chair of the doctoral committee in doing the dissertation research and writing the dissertation and should consult, as necessary, with members of the doctoral committee and other faculty members.

The dissertation must be reviewed and formally accepted by the examination committee.

The Final Oral Examination is open to all interested faculty members and students. They are encouraged to attend. They may participate in the examination, but they do not have a vote.

At least two weeks in advance of the Final Oral Examination, the student must schedule the examination with the doctoral examination committee and announce the meeting, distribute copies of an abstract of the dissertation to all faculty members and all resident Ph.D. students in the School, provide each member of the examination committee with a reading copy of the dissertation and have one additional copy available for loan.

The reading copies need not be "perfect copy" as required for final submission to the Graduate Division. They must, however, be completed in all substantive ways, including chapters, etc. They need not meet the stylistic standards established for a "perfect draft". (Margins may be incorrect, xerox copies are acceptable, etc.) A "perfect copy" must, of course, be prepared and submitted after the Final Oral Examination. (See Graduate Division publication, *Standards and Procedures for Theses and Dissertations.*)

The doctoral examination committee must decide whether the dissertation with modifications is accepted or is not accepted. There may be one negative vote if all members of the committee are certifying; none if only three are certifying.

Final Oral Examination Following Completion of the Dissertation: A Final Oral Examination will be required of all candidates.

The doctoral examination committee must decide with no more than one negative vote, whether the candidate has passed the Final Oral Examination.

Time to Degree.

	Quarters Expected	Maximum
(1) From graduate admission to admission to the doctoral program	1	3
(2) From graduate admission to Written Qualifying Examination	4	6
(3) (Advancement to Candidacy) from graduate admission to Oral Qualifying Examination	5	9
(4) From graduate admission to approval of dissertation proposal	6	9
(5) From graduate admission to the Final Oral Examination	12	15

Disqualification and Appeal of Disqualification. Termination of graduate status may be recommended if student fails to maintain substantial progress toward completion of the degree; or if the cumulative grade point average falls below a 3.0, or if the work in any two consecutive quarters falls below a 3.0 average; or failure on the Written or Oral Qualifying Examinations, after two successive tests. Such a recommendation is made by the Executive Committee of the Faculty based on the advice of the student's faculty adviser and the Dean. The Dean will notify the student in writing of the decision together with the reasons for it. Appeals of such actions may be made by formal petition to the faculty by the student.

Upper Division Courses

110. Information Resources and Libraries. Prerequisite: Sophomore Standing or consent of instructor. Provides an introduction to bibliographic and information resources and relevant research methodology. Covers both general and specialized materials. Designed to facilitate knowledgeable use of libraries and efficient retrieval of information. Some sections will focus on specific subject areas (such as Science and Technology). Letter grade.

111A-111D. Ethnic Groups and their Bibliographies. Introduction to bibliographical and research tools and methods for students with interests in ethnic groups. Specific sections focus on particular groups. 111A is concerned with American Indian history and culture, 111B with Afro-American history and culture; 111C with Latino history and culture; and 111D with Asian-American history and culture; sections on other ethnic groups may be added. Offered in collaboration with the several centers for ethnic studies. Students may take this course only once for credit.

140. Computer Programming for Library Operations and Services. Lecture, one hour; laboratory, three hours. Introduction to PL/1 (programming language) suitable for librarians, students of language and literature and similar disciplines. Concepts of text manipulations, file handling and storage management are emphasized. 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. No prior knowledge of computers, programming or MARC required. There will be a lab fee for this course.

Graduate Courses

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. Prerequisite: consent of instructor. 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 (Descriptive Cataloging) and 411 (Subject Cataloging and Classification) 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: course 410 (Descriptive Cataloging) and 411 (Subject Cataloging and Classification) or their equivalents. Study of selected problems in the design and use of verbal headings and classification systems. Manual and mechanized systems. May be taken twice.

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. (Formerly numbered 217.) Prerequisites: courses 420 and 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 Medical and Life Sciences. (Formerly numbered 218.) Prerequisite: courses 420 and 421. Literature of the medical and life sciences: reference and bibliographical works; periodicals and other serials; abstracting and indexing services; audio visuals; 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. (Formerly numbered 219.) Prerequisites: courses 420 and 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 non-bibliographic data bases, etc. Trends in scholarly and popular writing. Interdisciplinary nature of the literature.

224. Literature of the Humanities and Fine Arts. (Formerly numbered 220.) Prerequisites: courses 420 and 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 Latin American Studies M200 and History M265.) The course will acquaint students with general and specialized materials in fields concerned with Latin American Studies. Library research techniques will provide the experience and competency required for future bibliographic and research sophistication as the basis for enhanced research results.
Mr. Lauerhass

228. Legal Bibliography. Prerequisite: consent of instructor. 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.

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. Prerequisites: course 430 and consent of instructor. 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. Information Systems Analysis and Design. (Formerly numbered 243.) 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. Prerequisites: Research Methods; also desirable: library automation. The course will look at information systems and services from the points of view of their cost and effectiveness in meeting desired objectives. Principles of costing will be briefly reviewed, the bulk of the course being given over to a 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.
Ms. Svenonius

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.

249. Seminar on Special Topics in Information Science. Prerequisite: course 404 or consent of instructor. Topics will vary from quarter to quarter to allow emphasis on specialized topics on information science such as vocabulary development, file organization, searching procedures, indexing and classification, bibliographic and linguistic text processing, and measures or relevance and system effectiveness. May be repeated for credit with consent of instructor.

251. Reading and Reading Interests. (Formerly numbered 215.) 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 Interest of Children. Recommended preparation is English 112 (Children's Literature) or equivalent. 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. (Formerly numbered 211.) Early records and the manuscript period; history of the printed book and of periodical publications and newspapers, including materials and 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, is course 260 (Historical Bibliography) or its 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 hand-press 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 will 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 such as paper or type. May be repeated for credit with consent of instructor.

271. Seminar on Intellectual Freedom. 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.

272. Research Seminar in Library and Information Science. Prerequisite: enrollment in Ph.D., program or consent of instructor. Emphasis on recent contributions to theory, research and methodology. May be repeated for credit. Graded S/U.

280. Information Needs, Uses and Users. Lecture, three hours; discussion, one hour. Prerequisites: None. 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. Lecture, two hours. Prerequisites: GSLIS 420 and GSLIS 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 will be discussed.

290. Research Methodology. Prerequisite: consent of instructor. Role of research in bibliography, librarianship, and information science. Identification and design of research problems. Historical, statistical, analytical and descriptive techniques.

Professional Courses

400. Librarianship: The Institutional Setting and Professional Environment. Overview of the history, roles and functions in society of libraries and information centers, including their current status, structure, and problems. Professional associations and responsibilities, education, and research. Trends in administration, national planning, networks, standards, legislation, technology.

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.

404. Fundamentals of Information Science. Provides an introduction to the variety of subjects that constitute the information sciences and their relationship to libraries and other information centers. Discusses the techniques of systems analysis and the application of data processing equipment to selected library operations.

405. Automation of Library Processes. Prerequisite: basic knowledge of a programming language, preferably PL/I or IBM System/360 assembly language. Principles of application of data processing techniques to library procedures. Problems in the design, implementation, and testing of mechanized systems for libraries. Study of programming languages for library applications with emphasis upon PL/I.

406. Computer Programming for Bibliographic and Text Processing. Prerequisite: basic knowledge of the PL/I programming language. Emphasis is on the use of the computer in providing solutions to bibliographic and text processing problems.

410. Descriptive Cataloging. (Formerly numbered 201A.) 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. Subject Cataloging and Classification. (Formerly numbered 201B.) Subject treatment of library materials. Structure of subject heading lists and their application. Organization of the subject catalog. Structure and application of the Dewey Decimal and Library of Congress classification systems. Organization of the classed catalog and the shelflist.

412. Cataloging and Classification of Nonbook Materials. Prerequisites: courses 410 (Descriptive Cataloging), and 411 (Subject Cataloging and Classification). Problems in cataloging and classification of selected nonbook materials (e.g., films, maps, pictorial works, sound recordings) as separate collections and integrated collections.

414. Principles of Indexing and Abstracting. 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: Analysis and evaluation of devices for bibliographical control of information. Systems of national and trade bibliography (U.S. and foreign), indexing, abstracting, etc. Fact books, handbooks, directories, almanacs, encyclopedias, yearbooks.

421. Information Resources and Services II. Prerequisite: course 420. Continuation of 420. Additional sources of information: dictionaries; biographical, geographical and statistical sources; government documents. Special types of information service and service in different types of libraries and information centers. Evaluation of sources and services: standards. Economic aspects of service.

424. Computer-Based Information Resources. Overview of the major components of computer-based bibliographic information retrieval systems, planning on-line search strategies, and conducting on-line search services using a variety of data bases.

425. Computer-Based Information Resource Databases. Lecture, four hours. Prerequisites: courses 420, 421, 424. Introduces the student to the use of resource databases in the business and scientific communities. The file structures and hardware requirements for resource databases will be reviewed. Included are analyses of the information needs of scientists and business/labor coupled with investigations into specific resource databases addressing those needs.

429. Printing for Bibliographers. Prerequisites: course 260 (Historical Bibliography) or 261 (Analytical Bibliography) and 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. To be graded S/U.

430. Selection and Acquisition of Library Materials. (Formerly numbered 204.) 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. (Formerly numbered 205.) 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 non-book materials in audiovisual collections or instructional media centers. Bibliographical apparatus. Evaluation and collection development. Organization and administration.

441. Management of Libraries. 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. Covers the basic principles of personnel management. Provides a survey of current personnel practices in libraries. Discusses how the basic principles apply or need to be modified to fit the library setting.

444. Information Network. (Formerly numbered 244.) Problems in the formulation, funding and operation of information networks are examined. A survey of some of the major networks, including institutional and computer systems.

446. Library Services for Youth. Provides an overview of programs and services which are of interest to young adults (12-18 year olds). Discusses special problems in working with young people and the psychology of the teenager as it influences library programs.

447. Library Space Planning. Introduction to space planning and programming techniques and how they apply to libraries. Emphasis is on use of existing space, but planning new buildings is included. Reading blue prints, use of scales, contracts, use of consultants.

481. College, University and Research Libraries. (Formerly numbered 401.) 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. (Formerly numbered 402.) The government, organization, and administration of municipal, county, and regional public libraries; developments in the changing patterns of public library service.

464. School Libraries. (Formerly numbered 403.) 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.

485. 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. (½ course) Lecture, two hours. Practical storytelling to children and adults in various situations, with emphasis on the folktale and modern imaginative literature. Readings and discussion of the function of folklore in literature, society, child development, and library programming. Students will be required to choose, learn and tell stories and also read them aloud and present them in a library or community setting.

470. Special Libraries and Special Collections. (Formerly numbered 405.) 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. (Formerly numbered 418.) 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 scheduled.

472. Law Librarianship. Prerequisite: consent of instructor. 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 the 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.

487A-487Z. Special Studies in Library and Information Science. (½ to 1 course) Examination of specialized topics of professional interest. Topics and units will vary according to subject and may include conservation of materials, business information sources, problems in library management, current issues in cataloging, etc.

487A. Issues and Problems in Preservation of Library Materials. Will consider preservation of the full range of materials in library collections: causes of deterioration, requirements for basic maintenance and housing, evaluations of available alternatives (microforms, storage, repair, restoration), formulation of emergency plans, and the bases for cooperation and sharing of responsibilities. Not a laboratory course.

487B. Computer-Based Cataloging Services. Overview of the major components of computer-based cataloging systems, such as traditionally based services (MARC, OCLC, BALLOTS, etc.) vendor-provided services, and non-traditional services. Advances in computer technology are considered with respect to impact on automatic bibliographic description and data base development.

487C. Advanced Legal Bibliography. Examination of legal materials and research techniques not covered in course 228, Legal Bibliography. Included are 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 placed on legislative history sources and research techniques and computer-assisted legal research. New legal research techniques and tools will be evaluated.

487D. Seminar on Current issues in Librarianship. (Formerly numbered 272.) Prerequisite: consent of instructor. Identification, analysis, and discussion of critical issues currently facing the profession. May be repeated once.

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.

Professional Internship Courses

490. Professional Communication. The course is designed to increase librarians' sensitivity to language in different contexts. Students will explore the range of stylistic and syntactic options open to them for presenting proposals, reports, and research results. Such study will cover all aspects of professional communications: written, oral, and visual, including computer-generated. To be graded S/U.

491. Interpersonal Communication for Librarians and Information Scientists. 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. Letter grading. Ms. Anderson

495. Training and Supervision of Teaching Assistants. Prerequisite: Appointment as a teaching assistant or Extension-Division Instructor. Orientation, preparation, and supervision of graduate students who are involved in the teaching of undergraduate or an Extension course. Syllabus revision and materials preparations. Classroom observation. Twenty hours per quarter, times to be arranged. Two units of credit. Graded S/U.

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. To be graded S/U. Ms. Eisenbach

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. To be graded S/U. Ms. Eisenbach

Individual Study Courses

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus instructor, Department Chairman and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Study or Research. Prerequisite: consent of instructor. Directed special studies in the fields of bibliography, librarianship, and information science. Variable conference time depending upon nature of study or complexity of research. May be repeated once. To be graded S/U.

597. Directed Studies for the Doctoral Qualifying Examinations. (½ to 2 courses) To be graded S/U.

599. Doctoral Research and Writing. (½ to 2 courses) To be graded S/U by the professor supervising the dissertation.

Linguistics

(Office, 2113 Campbell Hall)

Stephen R. Anderson, Ph.D., *Professor of Linguistics.*
Raimo A. Anttila, Ph.D., *Professor of Indo-European and General Linguistics.*
William Bright, Ph.D., *Professor of Linguistics and Anthropology.*
Victoria A. Fromkin, Ph.D., *Professor of Linguistics.*
Edward L. Keenan, Ph.D., *Professor of Linguistics.*
Peter Ladefoged, Ph.D., *Professor of Phonetics.*
Paul M. Schachter, Ph.D., *Professor of Linguistics.*
Robert P. Stockwell, Ph.D., *Professor of Linguistics (Chair of the Department).*
Sandra A. Thompson, Ph.D., *Professor of Linguistics.*
George D. Bedell, Ph.D., *Associate Professor of Linguistics.*
Thomas J. Hinnebusch, Ph.D., *Associate Professor of Linguistics and African Languages.*
Mazisi R. Kunene, M.A., *Associate Professor of African Languages and Literature.*
Pamela L. Munro, Ph.D., *Associate Professor of Linguistics.*
Russell G. Schuh, Ph.D., *Associate Professor of Linguistics and African Languages.*
Bruce P. Hayes, Ph.D., *Assistant Professor of Linguistics.*
Patricia A. Keating, Ph.D., *Assistant Professor of Linguistics.*

•

Roger W. Andersen, Ph.D., *Assistant Professor of English.*
Christiane A. M. Baltaxe, Ph.D., *Adjunct Associate Professor of Psychiatry.*
J. Donald Bowen, Ph.D., *Professor of English.*
Russell N. Campbell, Ph.D., *Professor of English.*
Marianne Celce-Murcia, Ph.D., *Associate Professor of English.*
T. Craig Christy, Ph.D., *Assistant Professor of Germanic Linguistics and Philology.*
Keith S. Donnellan, Ph.D., *Professor of Philosophy.*
Christopher Ehret, Ph.D., *Professor of History.*
Patricia M. Greenfield, Ph.D., *Professor of Psychology.*
Evelyn R. Hatch, Ph.D., *Professor of English.*
Frances B. Hinofotis, Ph.D., *Assistant Professor of English.*
Robert S. Kirsner, Ph.D., *Associate Professor of Dutch-Flemish and Afrikaans.*
Paul V. Kroskrity, Ph.D., *Assistant Professor of Anthropology.*
Donald G. MacKay, Ph.D., *Associate Professor of Psychology.*
Claudia Mitchell-Kernan, Ph.D., *Associate Professor of Anthropology.*
C.P. Otero, Ph.D., *Professor of Spanish and Romance Linguistics.*
John F. Povey, Ph.D., *Professor of English.*
A. Carlos Quicoli, Ph.D., *Associate Professor of Portuguese.*
Emanuel A. Schegloff, Ph.D., *Professor of Sociology.*
John A. Schumann, Ph.D., *Associate Professor of English.*
Michael Shapiro, Ph.D., *Professor of Russian Linguistics and Poetics.*
Alan H. Timberlake, Ph.D., *Associate Professor of Slavic Languages.*
Terence H. Wilbur, Ph.D., *Professor of German.*
Dean S. Worth, Ph.D., *Professor of Slavic Languages.*
Eran Zaidel, Ph.D., *Associate Professor of Psychology.*

The Graduate Linguistics Program

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.

The Master of Arts Degree

Admission Requirements. 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.

Late applications for admission *without* possibility of consideration for support will be received through March 31.

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 Graduate Record Examination (verbal, quantitative, and analytical) must be submitted with the application. There is no minimum score requirement. If possible, applicants should submit a copy of some research paper or other piece of writing in linguistics or a closely related field.

While not required for admission, courses 100, 103, 110, 120A, 120B, 165A/200A, 165B/200B are to be taken prior to graduate courses in their respective areas. At the time of admission, students will be notified which, if any, of the above courses are required as 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 Assistant, Department of Linguistics.

Advising. The Chair appoints a Graduate Adviser for each student. All members of the faculty serve as graduate advisers. If students wish to change advisers, they should consult the Chair.

Students are expected to meet with their advisers each quarter to plan their study lists. Advisers will record their recommendations in the student's permanent file. Only their advisers may sign students' study lists each quarter.

At least one quarter before completing the M.A. thesis, the student selects a thesis committee, which is subject to the approval of the Chair and to the agreement of the committee members. The Chair of this thesis committee

becomes the student's official adviser. If a student opts for a terminal M.A. by taking a comprehensive examination (usually oral), an examination committee is appointed by the Chair.

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 Requirements. All students are required to 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 exam administered by the department; (2) a research paper based on extensive sources in the language; (3) a conversation exam showing knowledge in depth; (4) an ETS graduate language exam. One of the languages must be a language which has substantial literature on linguistics, the other may be a language which can 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 are permitted to use English to meet one of the foreign language requirements unless English was the language of instruction in their elementary and secondary education.

The departmentally-administered (#1 above) reading examination consists of a passage of approximately 500 words taken from a scholarly work in linguistics, of medium difficulty. Students are given one hour to translate the passage, with the aid of a dictionary. To pass the examination, a student must: 1) translate the entire passage; 2) make no more than one "major" error (such as missing the basic sense of some sentence); 3) make no more than three "minor" errors (such as mistranslating the aspect of some verb).

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: 165A/200A, 165B/200B, 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 had 165AB, so they must take three electives in all. The core courses in the relevant areas are normally considered prerequisite to the proseminars (250-259), which are specialized courses taken, for the most part, in the second year, or as electives in the first year if the student has sufficient background. Proseminars are repeatable for credit if the topic is different, as it nearly always is. No more than 4 units of 596A or 596B and no more than 8 units of 501 may be applied toward the required nine courses. The 260 courses (260 — phonetics, 261 — phonology, 262 — syntax, semantics, 263 — language variation, 264 — special topics) may be counted as electives for the M.A. if taken for 4 units.

The following undergraduate courses or equivalents are prerequisite to graduate courses in the corresponding areas: 100, 103, 110, 120A, 120B, 165A, 165B. Linguistics 103 must have been passed with a grade of "B" or better as prerequisite to 210A-210B. If 103 is waived on the basis of training elsewhere, the student must pass an examination in practical phonetics administered by the Department. This requirement must be completed before admission into the doctoral program.

No more than two courses (with grades of B or better) may be transferred toward the M.A. from institutions outside the University of California, though equivalent training elsewhere provides the basis for determining what courses the student should take.

Thesis or Comprehensive Examination Plan

Thesis Plan: After completing the required courses and the foreign language examination, the student will 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.*

The M.A. thesis has the following size limits: If on a single topic, the thesis cannot exceed 50 pages double-spaced typewritten on 8½ × 11 paper, either elite or pica typeface, with standard margins 1¼" by 1", including all appendices and bibliography, except that footnotes, appendices, and bibliography may be single-spaced. If on two topics, the topics must be in different fields, each topic limited to 35 pages, other specifications as above. If on two topics, only *one* of the two papers can be carried over as the basis of a subsequent Ph.D. qualifying 'publishable' paper.

The thesis committee consists of three faculty members. Students should consult with the Chair about the makeup of their committee. At least one quarter before the quarter in which the thesis is submitted, the committee must be officially nominated by completing a "Nomination of Master's Thesis Committee" form to be approved by the Department Chair, and by the Graduate Division.

If a student wishes 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 available in the Department office by 4 p.m. on the date listed in the UCLA *Calendar* as "last day to submit final drafts of thesis to master's committees for degrees to be conferred in current quarter."

Requirements for receiving an M.A. include the filing of a "Petition for Advancement to Candidacy" form early in the quarter during which the student expects to take the degree. (The deadline is published in the UCLA *Calendar.*) The thesis must be typed according to regulations set by the University. Information on these regulations and procedures is available from the Graduate Division. The deadline for submitting the completed thesis is in the UCLA *Calendar.*

A copy of the thesis will be kept on file in the Department.

Comprehensive Plan: After completing the required courses and the foreign language examination, the student must pass a Comprehensive Examination administered by a committee of the Linguistics faculty. The committee, consisting of four members, is appointed by the Chair. This is normally an oral examination, general in scope, *and will result in a terminal M.A. degree.* A separate examination committee is appointed by the Chair for each student.

Time to Degree. A student who enters the program without prior training in linguistics beyond the basic courses (listed in *Admission to Master's Program* above) should expect to spend four to six quarters in the M.A. program. A student with one to three deficiency courses will normally spend five to seven quarters in the program, and one with more than three deficiencies, six to nine quarters. All students *must* complete the M.A. within 3¼-quarter years; they should aim for a maximum of two years.

500 Series Course Limitations. No more than 4 units of 596A or 596B and no more than 8 units of 501 may be applied toward the required nine courses for the M.A.

Disqualification and Appeal of Disqualification. An average of 3.00 must be maintained in all coursework. Students with grade records fractionally below 3.00 in a given term are considered to be on probation for the following term, during which term their grade record must be brought up to 3.00. Students whose grade records do not meet these minimal standards are subject to dismissal. A student failing to complete the M.A. within 3¼-quarter years is also subject to dismissal.

Students who complete the M.A. but are denied admission into the Ph.D. program will not be permitted to re-enroll as a graduate student beyond the end of that academic year.

The Ph.D. Degree

Admission Requirements. General admission requirements are the same as those listed for the M.A. For information about admission to the doctoral program, see below.

Students who have done their earlier graduate work at UCLA will be considered for admission into the Ph.D. program on the basis of the following: 1) completion of all requirements for the M.A.; 2) the faculty's evaluation of the quality of the M.A. thesis and of the student's overall work and promise.

A student entering the graduate program who has already received an M.A. in Linguistics from another department or institution 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) The student may submit a master's thesis written at another institution or department. In this case, the Chair, in consultation with the student, appoints a committee to read and evaluate the thesis and to recommend revisions if necessary before submission to the entire faculty for final evaluation.

2) The student with an M.A. in Linguistics from another institution who has not written a thesis elsewhere is not required to formally submit a thesis, but is required to submit to the evaluation committee a paper equal in depth and scope to a thesis. A committee is appointed as in 1) above. In either case, once the committee has approved the thesis or paper, it is submitted to the entire faculty who evaluate its quality and the student's accomplishments and promise. This evaluation will normally take place at a full meeting of the faculty at the end of the quarter in which that student submits a thesis.

Advising. For general advising information, see the *Advising* section above.

A student must arrange with the Departmental Chair for the appointment of a guidance committee no later than the end of the first quarter of residence following admission into the Ph.D. program. This is an informal committee, consisting of three "inside" members (Linguistics faculty). Outside members may be included, if desired. There is a departmental form for this purpose. The chair of the guidance committee becomes the student's adviser and is the only person who can sign the student's study list. (The guidance committee usually becomes the nucleus of the doctoral committee.)

Major Fields and Subdisciplines. It is possible to 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 Requirements* for the M.A. degree.

Course Requirements. Candidates for the Ph.D. are required to take 32 units of graduate coursework beyond the M.A. requirements. These units must include 210A-210B unless they have been used to fulfill the M.A. requirement, and 8 units in an area distinct from that of the student's major area of concentration. The 32 units may not include courses 597, 599, or 275. Of the 32 units, no more than 12 units may be in 596A. A maximum of four 2-unit seminars may be included in the 32 units. *At some time, students are expected to present some of the results of their research at a meeting of the Linguistics Department Colloquium (Linguistics 275). This is a requirement for the degree.*

Written and Oral Qualifying Examination. In order to be advanced to candidacy, a student is 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 the student's 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 in consultation with the Department Chair, and approved by the Graduate Division.

The Oral Qualifying Examination is administered by the doctoral committee, based primarily on the topic of the dissertation research. The examination is not narrowly defined, but rather will include all the background necessary for the student to pursue research on the specific topic. Reexamination is possible upon recommendation by the committee. Students are expected to take the examination and be advanced to candidacy not later than six quarters after being admitted to the doctoral program.

Doctoral Committee. A doctoral committee, normally consisting of the Departmental Guidance Committee plus two outside members, must be appointed at least one month prior to the time the student expects to take the Oral Qualifying Examination, in accordance with the regulations of the Graduate Division.

Final Oral Examination Following Completion of the Dissertation. 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 student's doctoral committee.

Time to Degree. A student must complete the Ph.D. within seven quarters after being advanced to candidacy, extended to an outside limit of nine quarters more if the student has not exhausted earlier limits. The absolute limit for the Ph.D., from entrance to the Department as a pre-M.A. student, including leaves or interruptions of any kind, is seven calendar years. However, the approved normative time-to-degree for the Ph.D. is 15 quarters (five years) and this time limit must be observed in regard to the In-Candidacy Fee Offset Grant Program. The normative time-to-degree cannot be changed, but accrued time may be adjusted to allow time for students to make up deficiencies.

Candidate in Philosophy Degree. Students are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

Disqualification and Appeal of Disqualification. Any student failing to maintain a 3.00 average, or failing to be advanced to candidacy within the required time, is subject to disqualification at the discretion of the faculty of the Department.

Other Relevant Information. The Department requires that a student, after filing the dissertation, distribute to the faculty, with a copy for the Department, a Thesis Completion Statement, which should include date, committee membership, title, and abstract of the dissertation. Additional copies should be made available to students and other interested persons.

The Department issues an annually revised *Information Brochure* describing the program for applicants for admission.

*Graduate Courses

C200A. Linguistic Theory: Phonology. Prerequisite: course 120A. Concurrently scheduled with Linguistics C165A. The theory of generative phonology; the form of phonological rules; formal and substantive phonological universals. Recommended for students who plan to do graduate work in linguistics. 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, the graduate students are expected to produce a substantially deeper and more thorough research paper.

C200B. Linguistic Theory: Grammar. Prerequisite: course 120B or 127. Concurrently scheduled with Linguistics C165B. The form of grammars; word formation and sentence formation; formal and substantive universals in syntax; relation between syntax and semantics. Recommended for students who plan to do graduate work in linguistics. While the topics of coverage are the same for the undergraduate and graduate students, the depth of reading required of graduate students is greater, with more primary sources included. Also, the graduate students are expected to produce a substantially deeper and more thorough research paper.

201A. Phonological Theory: Current Issues. Prerequisite: course C165A/C200A. Survey of current issues in phonological theory. Mr. Anderson

201B. Phonological Theory in the Twentieth Century. Prerequisite: course C165A/C200A. Survey of the development of phonological theory in the twentieth century. Mr. Anderson, Mr. Bedell

202. Theory of Language Change. Prerequisite: course 110. Survey of current issues in language change. Mr. Anttila, Mr. Stockwell, Mr. Schuh

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, Mr. Ladefoged

206A. Syntactic Theory: Current Issues in Formal Syntax. Prerequisite: course C165B/C200B. Survey of current issues in formal syntactic theory.
Ms. Thompson, Mr. Schacter

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. Ms. Thompson

207. Semantic Theory. Prerequisite: course 180 or its equivalent may be required. Approaches to the study of meaning. Different offerings of this course will approach semantics from different theoretical perspectives (e.g. formal semantics, functional semantics, interpretive semantics). May be repeated for credit if a different theoretical approach.

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

210A. Field Methods I. (1½ courses) Prerequisites: courses C165A/C200A, C165B/C200B. A language unknown to members of the class to be analyzed from data elicited from a native speaker of the language. The term papers will be relatively full descriptive sketches of the language. May be repeated for credit when a different language is under investigation.

210B. Field Methods II. (1½ courses) Prerequisite: course 210A in the preceding quarter. Because different languages will be investigated in different years, 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 when a different language is under investigation. Mr. Bright, Ms. Munro

220. Linguistic Areas. (Formerly numbered 220A-220H.) Prerequisites: courses 120A, 120B; recommended preparation: courses C165A/C200A and 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, The Far East, etc. May be repeated for credit, if different language area.

225. Linguistic Structures. (Formerly numbered 225A-225Y.) Prerequisites: courses 120A, 120B; recommended preparation: C165A/C200A and C165B/C200B. Phonological and grammatical structure of a selected language, and its genetic relationships to others of its family. May be repeated for credit if different language family.

CM235. Theoretical Issues in Disorders of Language Development. (Same as Psychiatry and Biobehavioral Sciences M237.) Prerequisites: Linguistics 1 or 100 and 130 or 131 or consent of instructor. Introduction to the field of language disorders of children. The course deals primarily with 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 will be examined. Such questions as the relationship of cognition to linguistic ability will be considered. Concurrently scheduled with Psychiatry CM135 and Linguistics CM135. Graduate students will be expected to apply more sophisticated knowledge and produce a research paper of greater depth. Ms. Needleman

M248C. Topics in Linguistic Anthropology. (Same as Anthropology M241.) Prerequisite: consent of instructor. Problems in relations of language, culture and society. This course may be repeated for credit.

Proseminars and Seminars (numbered 250 and above) may be repeated for credit, having been approved by the Graduate Council as nonrepetitive in content.

251. Topics in Phonetics and Phonology 1. Proseminar. Prerequisites: course C165A/C200A; 201A and/or 203 may be required. Specialized topics in phonetics or phonology. May be repeated for credit. Concurrent meeting with Linguistics 256A-256B.

252. Topics in Syntax and Semantics 1. Proseminar. Prerequisites: course C165B/C200B; 206A, 206B, or 207 may be required. Specialized topics in syntax and semantics. May be repeated for credit. Concurrent meeting with Linguistics 257A-257B.

253. Topics in Language Variation 1. Proseminar. Prerequisites: course 110; 202 may be required. Specialized topics in language variation. May be repeated for credit. Concurrent meeting with Linguistics 258A-258B.

254. Topics in Linguistics 1. Proseminar. Prerequisites: courses C165A/C200A, C165B/C200B; 201A-201B, 202, 203, 206A-206B, or 207 may be required; consent of instructor. Individual proseminars will deal with such topics as child language, sociolinguistics, history of linguistic theory, neurolinguistics, languages of the world, psycholinguistics, etc. May be repeated for credit. Concurrent meeting with Linguistics 259A-259B.

256A. Topics in Phonetics and Phonology 2. Proseminar. Prerequisites: course C165A/C200A; 201A and/or 203 may be required. Specialized topics in phonetics or phonology. Graded In-Progress, with letter grade assigned on completion of 256B. May be repeated for credit. Concurrent meeting with Linguistics 251.

256B. Topics in Phonetics & Phonology 2. Proseminar. (½ or 1 course) Prerequisite: course 256A. Specialized topics in phonetics or phonology. Graded In Progress in 256A, with letter grade assigned on completion of 256B. May be repeated for credit. Concurrent meeting with Linguistics 251.

257A. Topics in Syntax and Semantics 2. Proseminar. Prerequisites: course C165B/C200B; 296A, 206B and/or 207 may be required. Specialized topics in syntax and semantics. Graded In-Progress, with letter grade assigned on completion of 257B. May be repeated for credit. Concurrent meeting with Linguistics 252.

257B. Topics in Syntax and Semantics 2. Proseminar. (½ or 1 course) Prerequisite: course 257A. Specialized topics in syntax and seminatics. Graded In-Progress in 257A, with letter grade assigned on completion of 257B. May be repeated for credit. Concurrent meeting with Linguistics 252.

258A. Topics in Language Variation 2. Proseminar. Prerequisites: courses 110; 202 may be required. Specialized topics in language variation. Graded In-Progress, with letter grade assigned on completion of 258A. May be repeated for credit. Concurrent meeting with Linguistics 253.

258B. Topics in Language Variation 2. Proseminar. (½ or 1 course) Prerequisite: course 258A. Specialized topics in language variation. Graded In-Progress in 258A, with letter grade assigned on completion of 258B. May be repeated for credit. Concurrent meeting with Linguistics 253.

259A. Topics in Linguistics 2. Proseminar. Prerequisites: courses C165A/C200A, C165B/C200B; 201A-201B, 202, 206A-206B, or 207 may be required; consent of instructor. Individual proseminars will deal with such topics as child language, sociolinguistics, history of linguistic theory, neurolinguistics, languages of the world, etc. Graded In-Progress, with letter grade assigned on completion of 259B. May be repeated for credit. Concurrent meeting with Linguistics 254.

259B. Topics in Linguistics 2. Proseminar. (½ or 1 course) Prerequisite: course 259A. Individual proseminars will deal with such topics as child language, sociolinguistics, history of linguistic theory, neurolinguistics, languages of the world, etc. Graded In-Progress in 259A, with letter grade assigned on completion of 259B. May be repeated for credit. Concurrent meeting with Linguistics 254.

Seminars (below) may be taken for two units of 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. (½ or 1 course) Prerequisites: courses 104, 201A, 203. A, B, C, may be taken independently of each other. Only Post-M.A. students may enroll for two units; all others must enroll for four. Graded S/U. May be repeated for credit.

261A-261B-261C. Seminar in Phonology. (½ or 1 course) Prerequisite: consent of instructor. A, B, and C may be taken independently of each other. Only Post-M.A. students may enroll for two units; all others must enroll for four. Graded S/U. May be repeated for credit.

262A-262B-262C. Seminar in Syntax and Semantics. (½ or 1 course) Prerequisite: consent of instructor. A, B, and C may be taken independently of each other. Only Post-M.A. students may enroll for two units; all others must enroll for four. Graded S/U. May be repeated for credit.

263A-263B-263C. Seminar in Language Variation. (½ or 1 course) Prerequisite: consent of instructor. A, B, and C may be taken independently of each other. Only Post-M.A. students may enroll for two units; all others must enroll for four. Graded S/U. May be repeated for credit.

264A-264B-264C. Seminar in Special Topics in Linguistic Theory. (½ or 1 course) Prerequisite: consent of instructor. Course 264A, 264B, and 264C may be taken independently of each other. Special topics may include child language, neurolinguistics, psycholinguistics, sociolinguistics, etc. Only Post-M.A. students may enroll for two units; all others must enroll for four. Graded S/U. May be repeated for credit.

275. Linguistics Colloquium. Prerequisite: fulfillment of the M.A. requirements. Varied linguistic topics, generally presentations of new research by students, faculty, and visiting scholars. Graded S/U.

276. Linguistic Colloquium. (non-credit course) Prerequisite: Graduate Standing. Same as course 275, taken without credit by students not presenting a colloquium. Graded S/U.

411. Research Orientation. (¼ course) Prerequisite: graduate standing. Sequence of lectures by all faculty of the Department to acquaint new graduate students with the research directions and resources of the Department. Graded S/U. May not be applied toward fulfillment of M.A. or Ph.D. course requirements.

495. College Teaching of Linguistics. (½ course) 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 credit toward full time equivalence, but not towards any degree program. Graded only on S/U basis.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA graduate adviser and graduate dean. Approval of host campus instructor, department chairman, and graduate dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. Graded S/U.

Individual Study and Research

596A. Directed Studies. (¼ to 2 courses) Prerequisite: completion of all undergraduate deficiency courses. May be applied toward fulfillment of M.A. course requirements. Directed individual study or research. May be repeated for credit. Graded S/U.

596B. Directed Linguistic Analysis. (¼ to 2 courses) Prerequisite: fulfillment of the M.A. requirements. Intensive work with native speakers by students individually. May be repeated for credit. Graded S/U.

597. Preparation for Master's Comprehensive and Doctoral Qualifying Examinations. (¼ to 2 courses) Prerequisite: at least six graduate courses in linguistics. Can be taken *only* in the quarters in which the student expects to stand for his comprehensive or qualifying examinations. May not be applied toward fulfillment of M.A. course requirements. May be repeated for credit. Graded S/U.

598. Research for Master's Thesis. (¼ to 2 courses) Prerequisite: consent of chairman of guidance committee. Research and preparation of the M.A. thesis. May not be applied toward fulfillment of M.A. course requirements. May be repeated for credit, for a maximum of 8 units credit. Graded S/U.

599. Research for Dissertation. (¼ to 4 courses) Prerequisite: advancement to candidacy for the Ph.D. degree. May not be applied toward fulfillment of Ph.D. course requirements. May be repeated for credit. Graded S/U.

African Languages

Graduate Courses

***†201A-201B. Comparative Niger-Congo.** Prerequisites: Linguistics 165A, 165B, 220A; recommended preparation; three quarter courses in one Niger-Congo language selected from courses 101-132, 199. Investigation of relationships within the Niger-Congo family as a whole, or within selected branches of the family. Mr. Welmers

*†202A-202B-202C. Comparative Bantu.** Prerequisites: Linguistics 165A, 165B, 220A; recommended preparation: three quarter courses in one Bantu language selected from African Languages 101-110, 199. Investigation of relationships among the Bantu languages; the extent and external relationships of Bantu. Mr. Givón

270. Seminar in African Literature. Mr. Kunene

Individual Study and Research

596. Directed Studies. (¼ to 2 courses) Directed individual study or research. Up to one full course may be applied toward fulfillment of M.A. course requirements. May be repeated for credit. Graded S/U. The Staff

Upper Division Courses

100. Introduction to Linguistics.

103. Introduction to General Phonetics.

104. Experimental Phonetics.

110. Introduction to Historical Linguistics.

114A. American Indian Linguistics.

114B. American Indian Language Structures.

120A. Linguistic Analysis: Phonology.

120B. Linguistic Analysis: Grammar.

125. Semantics.

127. Syntactic Typology and Universals.

130. Child Language Acquisition: Introduction.

131. Child Language Acquisition (for non-majors).

CM135. Theoretical Issues in Disorders of Language Development (concurrently scheduled with Ling. CM235).

140. Linguistics in Relation to Language Teaching.

M146. Language in Culture (same as Anthropology M140).

M150. Introduction to Indo-European Linguistics (same as IES M150).

160. History of Linguistics through the 19th Century.

164. Modern Theories of Language.

C165A. Linguistic Theory: Phonology (concurrently scheduled with Ling. C200A).

C165B. Linguistic Theory: Grammar (concurrently scheduled with Ling. C200B).

170. Language and Society: Introduction to Sociolinguistics.

175. Linguistic Change in English.

180. Mathematical Backgrounds for Linguistics.

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.

Arabic (Department of Near Eastern Languages) 280. Structure of Classical Arabic.

Armenian 210. History of the Armenian Language.

Dutch (Department of Germanic Languages) 234. The Structure of Modern Standard Dutch.

English 121. The History of the English Language.

122. Introduction to the Structure of Present-day English.

210. History of the English Language.

215. The Structure of Present-Day English.

218. Celtic Linguistics.

240. Studies in the History of the English Language.

241. Studies in the Structure of the English Language.

English as a Second Language 250K. Contrastive Analysis and Error Analysis in the ESL Context.

251K. Bilingual Comparative Studies. Seminar.

260K. Psycholinguistics and Language Teaching. Seminar.

270K. Language Policy in Developing Countries. Seminar.

Folklore 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.

Germanic Languages 117. 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 (Department of 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.

Iranian (Department of Near Eastern Languages) 210A-210B. The History of the Persian Language.

211A-211B. Modern Iranian Dialects.

Italian 259A. History of the Italian Language.

259B. The Structure of Modern Italian.

259C. Italian Dialectology.

Latin (Department of Classics) 240. History of the Latin Language.

Oriental Languages 175. The Structure of the Japanese Language.

223. History of the Japanese Language.

Philosophy 127A-27B. Philosophy of Language.

172. Philosophy of Language.

287. Seminar: Philosophy of Language.

Portuguese (Department of Spanish and Portuguese) 100. Phonology and Pronunciation.

103. Syntax.

M118. History of the Portuguese and Spanish Languages.

M203A-M203B. The Development of the Portuguese and Spanish Languages.

M251. Studies in Galegan-Portuguese and Old Spanish.

Psychiatry 249A-249B. Language Disorders of Childhood.

257A-257B-257C. Diagnostic and Therapeutics of Language Disabilities.

Psychology 122. Language and Communication.

123. Psycholinguistics.

260A-260B. Proseminar in Cognitive Psychology.

Russian (Department of Slavic Languages) 121. Russian Phonology.

122. Russian Morphology.

123. Historical Commentary to Modern Russian.

204. Introduction to the History of the Russian Literary Language.

241. Russian Phonology.

242. Russian Morphology.

243A-243B. Historical Phonology and Morphology of Russian.

263. Russian Dialectology.

264. The History of the Russian Literary Language.

265. Russian Syntax.

266. Russian Lexicology.

Scandinavian Languages (Department of Germanic Languages) 210. History and Description of the Scandinavian Languages.

Semitics (Department of Near Eastern Languages) 209A-209B-209C. Comparative Study of the Ethiopian Languages.

280A-280B-280C. Seminar in Comparative Semitics.

290A-290B-290C. Comparative Morphology of the Semitic Languages.

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 (Department of Slavic Languages) 222. The Structure of Slovak.

Sociology 144A. Conversational Structures I.

266. Selected Problems in the Analysis of Conversation.

267. Selected Problems in Communication.

Spanish (Department of Spanish and Portuguese) 100. Phonology and Pronunciation.

103. Syntax.

115. Applied Linguistics.

M118. History of the Portuguese and Spanish Languages.

M203A-M203B. The Development of the Portuguese and Spanish Languages.

204A-204B. Transformational Grammar.

206. Linguistics.

209. Dialectology.

M251. Studies in Galegan-Portuguese and Old Spanish.

256A-256B. Studies in Linguistics and Dialectology.

Turkic Languages (Department of Near Eastern Languages) 230A-230B-230C. A Historical and Comparative Survey of the Turkic Languages.

Management

(Office, 3250 Graduate School of Management)

Robert B. Andrews, Ph.D., *Professor of Management.*

James R. Bettman, Ph.D., *Professor of Marketing.*

John W. Buckley, Ph.D., *Arthur Young Professor of Accounting.*

Elwood S. Buffa, Ph.D., *Professor of Operations Management and Management Science.*

Joseph D. Carrabino, Ph.D., P.E., *Professor of Management.*

Fred E. Case, D.B.A., *Professor of Urban Land Economics.*

Samuel A. Culbert, Ph.D., *Professor of Behavioral and Organizational Science.*

Louis E. Davis, M.S., *Professor of Organizational Sciences and Research Socio-Technical Scientist.*

David K. Eiteman, Ph.D., *Professor of Finance.*

Donald Erlenkotter, Ph.D., *Professor of Planning and Decision Sciences and Chair of the Department.*

*Hyman R. Faine, J.D., *Adjunct Professor of Arts Management.*

Eric G. Flamholtz, Ph.D., *Professor of Accounting and Information Systems.*

Walter A. Fogel, Ph.D., *Professor of Industrial Relations, and Research Economist, Institute of Industrial Relations.*

Arthur M. Geoffrion, Ph.D., *Professor of Management Science.*

Glenn W. Graves, Ph.D., *Professor of Quantitative Methods.*

James D. Hodgson, A.B., *Adjunct Professor of Management.*

Alfred E. Hofflander, Ph.D., *Professor of Finance and Insurance.*

John E. Hutchinson, Ph.D., *Professor of Industrial Relations.*

James R. Jackson, Ph.D., *Professor of Management.*
Harold H. Kassarjian, Ph.D., *Professor of Management.*
Paul Kircher, Ph.D., C.P.A., *Professor of Accounting-Information Systems.*
Archie Kleingartner, Ph.D., *Professor of Industrial Relations.*
J. Clayburn LaForce Jr., Ph.D., *Professor of Economics and Dean of the School.*
Bennet P. Lientz, Ph.D., *Professor of Computers and Information Systems.*
Steven A. Lippman, Ph.D., *Professor of Quantitative Methods.*
James B. MacQueen, Ph.D., *Professor of Management.*
Robert Hal Mason, Ph.D., *Professor of International Business and Business Policy.*
Fred Massarik, Ph.D., *Professor of Behavioral Science and Industrial Relations, and Research Behavioral Scientist, Institute of Industrial Relations.*
Daniel J.B. Mitchell, Ph.D., *Professor of Industrial Relations, and Director, Institute of Industrial Relations.*
Frank G. Mittelbach, M.A., *Professor of Management and Planning, and Research Economist.*
Rosser T. Nelson, Ph.D., *Professor of Management Science and Production and Operations Management.*
Alfred Nicols, Ph.D., *Professor of Managerial Economics.*
William A. Niskanen, Jr., *Professor of Public/Not-for-Profit Management.*
William G. Ouchi, *Professor of Management.*
Anthony P. Raia, Ph.D., *Professor of Management.*
Richard W. Roll, Ph.D., *Professor of Finance.*
John P. Shelton, Ph.D., *Professor of Finance.*
R. Clay Sprowls, Ph.D., *Professor of Computers and Information Systems.*
*George A. Steiner, Ph.D., Litt.D., *Emeritus Harry and Elsa Kunin Professor of Business and Society.*
Robert Tannenbaum, Ph.D., *Professor of the Development of Human Systems.*
J. Fred Weston, Ph.D., *Professor of Managerial Economics and Finance.*
Harold M. Williams, J.D., *Professor of Management.*
Robert M. Williams, Ph.D., *Professor of Business Economics and Statistics.*
Ralph M. Barnes, Ph.D., *Emeritus Professor of Engineering and Production Management.*
William F. Brown, Ph.D., *Emeritus Professor of Marketing.*
John C. Clendenin, Ph.D., *Emeritus Professor of Finance.*
Ira N. Frisbee, M.B.A., C.P.A., LL.D., *Emeritus Professor of Accounting.*
Leo Grebler, Ph.D., *Emeritus Professor of Urban Land Economics.*
[15]Raymond J. Jessen, Ph.D., *Emeritus Professor of Business Statistics and Emeritus Professor of Public Health.*
Erwin M. Keithley, Ed.D., *Emeritus Professor of Management.*
Harold Koontz, Ph.D., *Emeritus Mead Johnson Professor of Management.*
Wayne L. McNaughton, Ph.D., *Emeritus Professor of Management.*
Frederic Meyers, Ph.D., *Emeritus Professor of Industrial Relations.*
George W. Robbins, M.B.A., *Emeritus Professor of Marketing.*
Harry Simons, M.A., C.P.A., *Emeritus Professor of Accounting.*
Ichak Adizes, Ph.D., *Associate Professor of Managerial Studies.*
Theodore A. Andersen, Ph.D., *Associate Professor of Business Economics and Finance.*
Lee G. Cooper, Ph.D., *Associate Professor of Behavioral and Orangizational Science.*
Thomas E. Copeland, Ph.D., *Associate Professor of Finance.*
Bradford Cornell, Ph.D., *Associate Professor of Finance.*
Richard A. Goodman, D.B.A., *Associate Professor of Management.*
Michael E. Granfield, Ph.D., *Associate Professor of Business Economics.*
J. Morgan Jones, Ph.D., *Associate Professor of Management Science.*
Larry J. Kimbell, Ph.D., *Associate Professor of Managerial Economics.*
Richard J. Lutz, Ph.D., *Associate Professor of Marketing.*
Marvin May, Ph.D., *Adjunct Associate Professor of Management.*
David Mayers, Ph.D., *Associate Professor of Finance.*
John J. McDonough, D.B.A., *Associate Professor of Accounting-Information Systems.*
Bill McKelvey, Ph.D., *Associate Professor of Management and Organizational Behavior.*
Ephraim R. McLean, Ph.D., *Associate Professor of Information Systems.*
Frank E. Norton, Ph.D., *Associate Professor of Business Economics.*
Alfred E. Osborne, Jr., Ph.D., *Associate Professor of Business Economics.*
Rakesh K. Sarin, Ph.D., *Associate Professor of Production and Operations Management.*
Hans Schöllhammer, D.B.A., *Associate Professor of Management Theory and International Business.*
Carol Ann Scott, Ph.D., *Associate Professor of Marketing.*
E. Burton Swanson, Ph.D., *Associate Professor of Computers and Information Systems.*
Barton A. Weitz, Ph.D., *Associate Professor of Marketing.*
Peter Pin-Shan Chen, Ph.D., *Acting Associate Professor of Computers and Information Systems.*
Jay B. Barney, Ph.D., *Assistant Professor of Management.*
David M. Boje, Ph.D., *Assistant Professor of Behavioral and Organizational Science.*
John M. Clapp, Ph.D., *Assistant Professor of Urban Land Economics.*
Imran S. Currim, Ph.D., *Assistant Professor of Marketing.*
Robert Geske, Ph.D., *Assistant Professor of Finance.*
Dominique M. Hanssens, Ph.D., *Assistant Professor of Marketing.*
Sanford M. Jacoby, Ph.D., *Assistant Professor of Industrial Relations.*
Lauren Kelly, Ph.D., *Assistant Professor of Accounting-Information Systems.*
James G. Manegold, Ph.D., *Assistant Professor of Accounting-Information Systems.*
Ronald W. Masulis, Ph.D., *Assistant Professor of Managerial Economics and Finance.*
Deborah L. Roedder, Ph.D., *Assistant Professor of Marketing.*
Richard P. Rumelt, D.B.A., *Assistant Professor of Business Policy and Management.*
Sheridan D. Titman, Ph.D., *Assistant Professor of Finance.*
Brett Trueman, Ph.D., *Assistant Professor of Finance.*
William M. Zumeta, Ph.D., *Assistant Professor of Public Sector Management.*
Mark S. Grinblatt, Ph.D., (In Progress), *Acting Assistant Professor of Finance.*
John W. Mamer, Ph.D., (In Progress), *Acting Assistant Professor of Management.*
Robin M. Wagner, Ph.D., *Acting Assistant Professor of Accounting-Informational Systems.*

•

William H. Broesamle, M.B.A., *Lecturer in Management and Associate Dean of the School.*
Robert L. Carmichael, Ph.D., *Lecturer in Computers and Information Systems.*
Jason L. Frand, Ph.D., *Lecturer in Management.*
Patricia O. Katsky, Ph.D., *Lecturer in Management.*
Joan K. Lasko, Ph.D., *Senior Lecturer in Behavioral Science.*
Paul Prasow, Ph.D., *Senior Lecturer in Industrial Relations, and Research Economist, Institute of Industrial Relations.*
Warren H. Schmidt, Ph.D., *Emeritus Senior Lecturer in Behavioral Science.*
Edward V. Sedgwick, Ph.D., *Lecturer in Management.*

*Recalled to active service.

Master of Business Administration (M.B.A.)

The 2-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 persons, who must be able to attend classes scheduled between the hours of 4:00 and 10:00 p.m. at least two days a week.

The program aims to develop general management perspectives and knowledge while imparting expertise in a student-selected field 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 Requirements. Although no specific undergraduate major is required for entrance, students *must* complete elementary algebra and differential calculus before entering the M.B.A. program. All applicants 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-R, Princeton, NJ 08541, phone (609) 883-8519; the local phone number in Los Angeles is (213) 254-5236.

Foreign applicants who do not hold degrees from universities or colleges where English is the primary language are required to take the Test of English as a Foreign Language (TOEFL).

Applications and information about the M.B.A. program are available in the M.B.A. Program Office, Room 3371, Graduate School of Management, UCLA, Los Angeles, CA 90024, phone (213) 825-8874. Applicants must complete the M.B.A. Application, which includes the Application for Admission to Graduate Status. Admission is for the Fall Quarter only; completed applications, with full documentation, must be filed with GSM by March 15. Applicants for the Arts Management program must specify their wish to be considered for admission in that field.

Consideration is given to the applicant's 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. Selection of applicants is based on each candidate's total application; therefore, minimum required undergraduate academic averages and GMAT scores have not been established. Preference is given to applicants who have had full-time

work experience related to the field of management 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.

Advising. Members of the M.B.A. admissions office professional staff may be contacted for general advising. Their address is Room 3371, Graduate School of Management, UCLA, Los Angeles, CA 90024. Students must select their areas of concentration by the end of their first year. There are advisers for each of the established concentrations. These advisers assist students in planning appropriate programs, and students meet with their concentration advisers as often as necessary.

Major Fields or Concentrations

Accounting-Information Systems

Arts Management

Behavioral & Organizational Science

Business Economics

Computers & Information Systems

Finance

Industrial Relations

International & Comparative Management

Management Science

Management Strategy and Policy

Marketing

Production & Operations Management

Public/Not-for-Profit Management

Urban Land Economics

Course Requirements. The four required elements of the M.B.A. program are the nucleus, the management core, the concentration, and electives. 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 require students to learn the fundamentals of disciplines which underlie the practice of management. The concentration, selected by each student from a wide variety of established alternatives, provides specialized knowledge and skills for a particular field of management work. Electives permit students to pursue subjects of personal interest.

Nucleus. The nucleus as a series of three required courses focuses on developing those interpersonal and decision-making skills essential to the practice of management. The first-year nucleus course (Mgt. 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 2-quarter Management Field Study project, in which teams of four or five students serve as management consultants to business firms or other organizations. The members of each team represent a variety of concentrations. Proceeding under faculty guidance, each team conducts a policy-level study leading to specific action recommendations. 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: a 5-course management analysis requirement, a 3-course functional fields requirement, and a 2-course management processes requirement.

Management analysis requirements (five courses): Mgt. 402, Data Analysis, Statistics, and Decision-Making; Mgt. 403, Managerial Accounting; and three courses from the following four: Mgt. 404, Managerial Computing; Mgt. 405, Managerial Economics: The Organization; Mgt. 406, Managerial Economics: Forecasting; Mgt. 407, Managerial Model Building.

Functional fields requirements (three of the following four) Mgt. 408, Managerial Finance; Mgt. 409, Personnel Management and Labor Relations; Mgt. 410, Production and Operations Management; Mgt. 411, Elements of Marketing.

Management processes requirements (two courses): Mgt. 412, Management of Organizations; and Mgt. 420, Management Policy.

Concentration. The concentration focuses on a field of specialization within the broad realm of management. In addition to established concentrations, in special circumstances a student may design an individualized concentration in collaboration with interested faculty members. Individualized concentrations may include courses offered elsewhere on campus. The concentration consists of a minimum of seven to eight courses, within which some choice may be permitted.

Electives. Each student must select at least three 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 the student's program of studies.

Time to Degree. The full-time M.B.A. must be completed within two calendar years of admission. Acceleration may be possible by attending Summer Sessions.

Normally, students complete the M.B.A. program in six quarters; a summer session may count as one quarter. The minimum time required to complete the M.B.A. program is five quarters. Students in the M.B.A. Program for the Fully-Employed proceed at approximately half-time and complete the program in a maximum of 12 quarters, or four years.

At least 96 units of work towards the degree must be completed in residence in the M.B.A. program at UCLA. In special cases, up to 12 units of graduate work taken elsewhere and not used toward another degree may be counted toward the 96-unit total.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	4	letter	2

A maximum of two 4-unit 596 courses may be taken for credit toward the 96-unit requirement.

Disqualification and Appeal of Disqualification. M.B.A. students who at the end of their first year in the program have less than a 3.0 grade point average or have completed fewer than 48 units are subject to disqualification. Their records are reviewed by the Assistant Dean-Director of the M.B.A. program, and if disqualification seems warranted, such action is recommended to a subcommittee of the M.B.A. Policy Committee. If this committee agrees, disqualification is recommended to the Dean of the Graduate Division. Appeals are made through the Dean of the Graduate School of Management.

Involvement with the Professional Management Community. One of the outstanding features of the UCLA Graduate School of Management M.B.A. program is the deep involvement of its students with the professional management community. There are a variety of student organizations which 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. Program

The School of Law and the Graduate School of Management jointly offer a program which makes it possible to earn the J.D. and the M.B.A. degrees in four academic years. This program is designed to provide opportunities for students to prepare for careers where law and management overlap and where understanding of both fields is necessary. For example, a graduate's career might be in corporate law, specialized areas of management consulting, public service, international trade or industrial relations.

Admission Requirements. Applicants who wish to apply to the J.D./M.B.A. program should apply to both the School of Law and the Graduate School of Management concurrently, following the application procedures specified by each school. Admission decisions for the

J.D./M.B.A. program are made by independent committees from the School of Law and the Graduate School of Management, and applicants must be fully qualified for admission to both schools to be admitted to the combined program.

Questions concerning the J.D./M.B.A. program should be addressed to the Director of M.B.A. Student Affairs and Admissions at the Graduate School of Management or to the Assistant Dean for Student Affairs in the School of Law.

Program Requirements. In the first year of the program, all first-year J.D. program courses are taken. In the second year, the first-year M.B.A. nucleus and management core requirements are taken. During the third and fourth years, students complete the management field study requirement, five M.B.A. concentration courses and one or more electives in the Graduate School of Management, and 41 elective units in the School of Law.

The total requirements for the J.D./M.B.A. program include 76 quarter units in the Graduate School of Management and 73 semester units in the School of Law. Normally 96 quarter units are required for the M.B.A. and 85 semester units for the J.D. The J.D./M.B.A. requirements are as follows:

1. The first year law curriculum (30 semester units)
2. Forty-one elective units in the School of Law
3. The M.B.A. nucleus, management core and one elective (56 quarter units)
4. Twenty concentration units in the Graduate School of Management.

After completing all the requirements for the J.D./M.B.A. program, both degrees are awarded simultaneously. If, while in the J.D./M.B.A. program, a student decides not to complete either the J.D. or the M.B.A., all of the regular requirements for the program the student wishes to complete must still be met.

M.B.A./M.L.S. Program

The M.B.A./M.L.S. program is a 3-year concurrent degree program jointly sponsored by the Graduate School of Management and the Graduate School of Library and Information Science. The program 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.

Admission Requirements. In order to apply to this program, applicants should request all M.B.A./M.L.S. application materials from the M.B.A. Admissions Office, Graduate School of Management, UCLA. All application materials should be completed and returned to the M.B.A. Admissions Office. Admission decisions for the concurrent program are made by a committee composed of representatives from the Graduate School of Library and Information Science and the Graduate School of Management, and applicants must be fully qualified for admission to both schools to be admitted to the combined program. Questions concerning the M.B.A./M.L.S. program should be addressed to the Director of M.B.A. Student Affairs and Admissions in the Graduate School of Management or to the Dean of the Graduate School of Library and Information Science.

Program Requirements. The first year of the program is normally spent taking Library Science courses. In the second year, students complete all first-year M.B.A. requirements, and the third year is divided between courses taken at both schools.

The total requirements for the M.B.A./M.L.S. program include 84 units in the Graduate School of Management and 48 units in the Graduate School of Library and Information Science. In addition, 12 M.B.A. elective units may be fulfilled by required courses taken in Library Science.

After completing the requirements for the M.B.A./M.L.S. program, both degrees are awarded simultaneously. If, while in the program, a student decides not to complete either the M.B.A. or M.L.S., all of the regular requirements for the program the student wishes to complete must still be met.

M.B.A./M.P.H. Program

The M.B.A./M.P.H. program is a 3-year concurrent degree program jointly sponsored by the Graduate School of Management and the School of Public Health. The program is designed for individuals who desire a management career in health care and related fields and who wish in-depth professional preparation for such a career. Its establishment 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.

Admission Requirements. In order to apply to the M.B.A./M.P.H. program, applicants should request all M.B.A./M.P.H. application materials from the M.B.A. Admissions Office, Graduate School of Management, UCLA. All application materials should be completed and returned to the M.B.A. Admissions Office. Admission decisions for the concurrent program are made by a committee composed of representatives from the School of Public Health and the Graduate School of Management, and applicants must be fully qualified for admission to both schools to be admitted to the combined program. Questions concerning the M.B.A./M.P.H. program should be addressed to the Director of M.B.A. Student Affairs and Admissions in the Graduate School of Management or the Head of the Division of Health Services and Hospital Administration in the School of Public Health.

Program Requirements. The first year of the program consists of the first-year M.B.A. curriculum. In the second year, the core of the M.P.H. program is taken as well as a combination of Management and Public Health courses that deal with chosen areas of specialization. The third year is a continuation of the second.

The total requirements for the M.B.A./M.P.H. program include 84 units in the Graduate School of Management and 48 units in the School of Public Health. An additional 12 units are counted toward the degree from courses taken at both schools concurrently.

After completing all the requirements for the M.B.A./M.P.H. program, both degrees are awarded simultaneously. If, while in the M.B.A./M.P.H. program, a student decides not to complete either the M.B.A. or the M.P.H., all of the regular requirements for the program the student wishes to complete must still be met.

M.B.A./M.A. Latin American Studies Program

The M.B.A./M.A. (LAS) program is a 2½ to 3-year concurrent degree program jointly sponsored by the Graduate School of Management and the Latin American Studies Interdepartmental Degree Committee. Students successfully completing the program will be awarded the Master of Business Administration (M.B.A.) degree and the Master of Arts (M.A.) degree in Latin American Studies. The program is 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.

Admission Requirements. Students should request application materials from the GSM M.B.A. Admissions Office and the Latin American Studies Program. Applicants must take the Graduate Management Admission Test but do not need to take the Graduate Record Examination. Admission decisions for the M.B.A./M.A. (LAS) program are made by a joint admissions committee, and applicants must be fully qualified for admission to both departments to be admitted to the combined program.

Questions concerning the M.B.A./M.A. (LAS) program should be addressed to the Director of M.B.A. Student Affairs and Admissions in the Graduate School of Management or to the Director of Academic programs in the Latin American Studies Program.

Program Requirements. Students typically devote all of their first year to the curriculum required of all first-year M.B.A. students. During the second year, students complete the concentration in international management, focusing on Latin America in their courses, and satisfy all remaining requirements for the M.B.A. In addition, they begin to develop their second and third fields in Latin American Stud-

ies through elective courses outside GSM. Possible fields include Latin American economics, political science, history, sociology, anthropology, geography, fine arts, or literature.

After the second year, students must complete any remaining requirements for the two degrees. Typically, these consist of two or three additional courses in Latin American Studies and a comprehensive interdisciplinary research paper of approximately 50 pages, prepared in consultation with a committee of three faculty members representing the student's three fields in Latin American Studies. Students can make use of Summer Sessions to complete requirements or they can continue another quarter or two during the regular academic year. Students who lack sufficient background in Latin American Studies may be required to complete certain prerequisite coursework in addition to the regular program requirements.

For the M.A. in Latin American Studies, there is also a requirement of proficiency in both Spanish and Portuguese (or an indigenous language of Latin America), through the equivalent of Spanish 25 and Portuguese 3, *or* Portuguese 25 and Spanish 5. The language requirement can be fulfilled through coursework, examination, or certification by an appropriate authority.

M.B.A./M.A. Urban Planning Program

The M.B.A./M.A. Urban Planning program is a 3-year concurrent degree program jointly sponsored by the Graduate School of Management and the Graduate School of Architecture and Urban Planning. The program is designed for individuals 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.

Admission Requirements. In order to apply to the M.B.A./M.A. (UP) program, applicants should request all M.B.A./M.A. (UP) application materials from the M.B.A. Admissions Office, Graduate School of Management, UCLA. All application materials should be completed and returned to GSM. Admission decisions for the concurrent program are made by a committee composed of representatives from the Urban Planning program and the M.B.A. program, and applicants must be fully qualified for admission to both schools to be admitted to the combined program. Questions concerning the M.B.A./M.A. (UP) program should be addressed to the Director of M.B.A. Student Affairs and Admissions at the Graduate School of Management or to the Graduate Counselor, Urban Planning program.

Program Requirements. The first year of the program consists of the first-year M.B.A. curriculum. The second and third years are divided between both programs.

The total requirements for the M.B.A./M.A. (UP) program include from 72 to 92 units in the Graduate School of Management and from 48 to 68 units in the School of Architecture and Urban Planning. All core and concentration requirements for each program must be met, but where the two programs' core courses are substantially the same, students may choose from either program's offerings. A maximum of 24 units may be counted toward requirements for both degrees.

After completing all the requirements for the M.B.A./M.A. (UP) program, both degrees are awarded simultaneously. If, while in the M.B.A.-M.A. (UP) program, a student decides not to complete either the M.B.A. or the M.A. (UP), all of the regular requirements for the program the student wishes to complete must still be met.

The 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 21-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 five-day, off-campus residential sessions 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, Graduate School of Management, UCLA, Los Angeles, California 90024.

M.S./Ph.D. Programs

Admission Requirements. All applicants are required to take the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE). Foreign applicants who do *not* hold a degree from an English-speaking university are required to take the Test of English as a Foreign Language (TOEFL). Three letters of recommendation are included in the application and must be submitted with the completed application. All application materials, including transcripts, should be sent directly to the Doctoral Office, Graduate School of Management, UCLA.

Program information and application materials may be obtained from: Doctoral Office, 3379 Graduate School of Management, UCLA, Los Angeles, California 90024.

The School's Application for Admission to the M.S./Ph.D. program and the Graduate Admissions' Application of the Graduate Division are combined in one form, which is available at the above address. Applications are accepted for Fall Quarter admission only; the deadline for submission of applications and complete documentation is January 31.

All applicants to the M.S. or Ph.D. program are strongly urged to arrange an interview with at least one faculty member of her/his proposed area of concentration or major field area. The interview should take place before February 1.

The Master of Science Degree

The academic master's program is a full-time program which leads to the Master of Science (MS) degree in Management. It is currently offered in only two specializations: Business Economics and Management Science. The primary objective of the M.S. program is to offer students intense study in either of these two specializations and to prepare them to conduct substantive research.

Some students will enter the program with the goal of eventual acceptance into the doctoral program; for others, the M.S. will be a terminal degree. In either case, the program's emphasis is on advanced specialized training and the development of research capability.

Advising. New master's students are initially advised by the M.S. adviser in their field of concentration. Students are urged to establish a working relationship with one or two faculty members early in their studies. They are free to change advisers whenever they wish to do so during the course of their progress through the master's program. The overall adviser of the program is the Assistant Dean, M.S./Ph.D. Programs.

Students are required to submit Proposal of Study forms by the end of their second quarter. These forms list the courses a student expects to take to fulfill the requirements of the program. A quarterly review is made by the Doctoral Office of all students' progress, based upon their study forms and transcripts. Students having scholastic difficulty, or making insufficient progress, are asked to discuss their progress with the Assistant Dean. All conversations with the Assistant Dean relating to progress are documented; copies are sent to the student's adviser, and records are kept in the student's file in the Doctoral Office.

Major Fields or Concentrations. Business Economics, Management Science

Course Requirements

Business Economics. A maximum of 17 courses may be required. It is possible to waive the eight prerequisite courses on the basis of prior coursework. Nine graduate level

courses (the required and elective major field courses plus 4 units of 598) are required and cannot be waived.

A. Prerequisites (eight courses): Mgt. 405, Managerial Economics: The Organization; Mgt. 400, Mathematics for Management; Mgt. 434, Managerial Accounting and Finance; Mgt. 406, Managerial Economics: Forecasting; Mgt. 408, Business Finance; Mgt. 213A, Probability and Statistics; Mgt. 200A, Mathematical Economics; Mgt. 200B, Econometrics.

B. Major Field (eight courses — deviations may be approved by the chair of the Business Economics Academic Unit).

Required (five courses): Mgt. 201A, Business Forecasting; Mgt. 201B, Industry Forecasting; Mgt. 201C, Regional Economic Forecasting; Mgt. 202B, Principles of Industrial Organization; Mgt. 202C, Empirical Studies in Industrial Organization; Mgt. 205A, International Business Economics.

Electives — illustrative courses and course sequences (three courses):

Industrial Organization: Mgt. 202A,D; Mgt. 203A,B,C; Mgt. 231A,B,C; Econ. 271, 272; Econ. 204.

Techniques for Analysis: Econ. 247, 248; Econ. 245A,B,C; Mgt. 240A,B.

Economic Forecasting: Mgt. 201B,C,D; Mgt. 205B,C; Mgt. 230A,B,C.

C. Master's Thesis (one course) — 4 units of Mgt. 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 level courses (methodological core, depth field, and 4 units of 598) are required and cannot be waived.

A. Prerequisites (four courses): Math 32B, Introduction to Calculus of Several Variables; Math, 152A,B, Applied Mathematical Statistics; Mgt. 113B, Computer Programming Methods.

B. Managerial Core (three courses): Mgt. 403, Managerial Accounting; Mgt. 405, Managerial Economics: The Organization; Mgt. 408, Managerial Finance.

C. Methodological Core (five courses) (deviations may be approved by the chair of the Management Science Academic Unit): Mgt. 203A, Economics of Decision; Mgt. 210A, Mathematical Programming; Mgt. 210B, Applied Stochastic Processes; Mgt. 210C, Network Flows and Combinatorial Programming; Mgt. 216A, Simulation of Operational Systems.

D. Depth Field: three courses which support the student's thesis research are required.

E. Master's Thesis (one course): 4 units of Mgt. 598.

Thesis or Comprehensive Examination Plan. A thesis is required for the Master of Science degree in Management. 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 student's sixth quarter. No outside member is required.

Time to Degree. From graduate admission to award of the degree: Six quarters.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	4-8	Letter	No Limit
598	4-8	S/U	No Limit

Four units of 596 and 4 units of 598 may be used toward the minimum graduate course requirement of nine courses.

Disqualification. Termination of a student may be recommended when a 3.0 average is not maintained or when a student is making insufficient progress. The decision to recommend termination of a student is made by the Progress Committee of the Doctoral Board in conjunction with the student's concentration area faculty.

Appeals. A student can appeal the Progress Committee's decision by requesting that the Dean of the School appoint a faculty committee to reassess the Progress Committee's decision; the Dean decides whether such action is warranted or not.

The Ph.D. Degree

The doctoral program in management is a research-oriented degree program which leads to the Doctor of Philosophy (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 each student substantial opportunities to discover his or her own, unique scholarly focus and competence.

Advising. All new doctoral students are initially advised by the Doctoral Adviser for their particular academic unit. Students are urged to establish a working relationship with one or two faculty members early in their studies. They are expected to have a close working relationship with at least one faculty member by the end of their first year in the program. Students are free to change advisers whenever they wish to do so during the course of their progress through the program. The overall adviser is the Assistant Dean, M.S./Ph.D. Programs.

All first-year students are reviewed by their respective academic units during the Spring Quarter of their first year in the program. First-year grades, papers, self evaluations, and faculty evaluations are generally used in the review process. The evaluation is discussed with a student before a final, written evaluation is forwarded to the Doctoral Office. A copy of the final evaluation is kept in the student's file in the Doctoral Office.

By the end of their first year in the program, all students are required to submit Proposed Field of Study forms, which must be approved by the Assistant Dean. These forms outline all of the coursework the student plans to take to satisfy the program requirements plus the dates when the coursework, research paper, and major field examination are expected to be completed. A quarterly review is made by the Doctoral Office of each student's progress based upon program deadlines, the Field of Study forms, and transcripts. If a student is having scholastic difficulty, appears to be making insufficient progress, or is approaching a program deadline, his/her case is brought to the attention of the Progress Committee. The Progress Committee determines what action should be taken. A copy of all correspondence between the Committee and the student or his/her adviser is maintained in the student's file.

The Progress Committee is composed of three members: the Assistant Dean, one faculty member selected from those appointed to serve on the Doctoral Board for the year, and one student elected by the doctoral students. The committee is formed at the beginning of each academic year and meets at least three times during the year.

Major Fields or Concentrations.

Accounting-Information Systems

Behavioral & Organizational Science

Business Economics

Computers & Information Systems

Finance

Industrial Relations

International Business & Comparative Management

Management Science

Management Strategy & Policy

Marketing

Production & Operations Management

Urban Land Economics

Course Requirements. The research preparation requirement consists of two parts: (1) a course requirement and (2) a research paper. A student is required to take five (5) research courses which are not part of the major field area. These courses must be completed before a student can take an 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 (three faculty members designated by the Assistant Dean) no later than the Spring Quarter of a student's third year of study.

The breadth requirement consists of eight courses which are clearly outside of a student's major field area. It is intended that students 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 can be waived by prior coursework. They must be completed before a student can take the Oral Qualifying Examination.

There is no formal major field course requirement. Each student, in consultation with a major field adviser, designs a course of study which will prepare him/her to pass the major field examination.

Written and Oral Qualifying Examination. Proficiency in the major field area is determined by a written examination, supplemented in some areas by an oral examination, designed by that academic unit's faculty. The major field examination must be taken and passed by the end of the Spring Quarter of a student's third year of study.

Students are required to present the substance of their dissertation plans in a formal seminar to which all Ph.D. students and faculty are invited.

Following the formal seminar, the student prepares a dissertation proposal and participates in the nomination of a 5-member dissertation committee. When all the preliminary requirements have been fulfilled (coursework, research paper, major field examination, seminar), the student's Oral Qualifying Examination can be held; and, if passed, he/she is advanced to candidacy. The Oral Qualifying Examination must be successfully passed within 4½ years of the date of entrance into the program.

Final Oral Examination Following Completion of the Dissertation. The School requires that students take a Final Oral Examination; this requirement may be waived only under exceptional circumstances.

Time to Degree. The program is designed to take four years (12 quarters) from graduate admission to awarding of the degree; completion of the degree cannot exceed 7½ years (23 quarters). Normative time-to-degree is 4½ years (14 quarters).

Candidate in Philosophy Degree. The Candidate in Philosophy degree is available to GSM doctoral students upon their advancement to candidacy.

Disqualification. Students are terminated from the doctoral program whenever it becomes evident that they are not making satisfactory progress or that they are unlikely to be able to complete the program successfully. The most frequent occasions for termination occur when less than a 3.0 average is maintained for two consecutive quarters; when the student's major field area faculty recommends termination at the time of the first-year review, or when a student fails to meet the time requirements for the research paper, the major field examination, advancement to candidacy, or the dissertation.

The minimum standard of performance at GSM exceeds the University's minimum grade point average of 3.0. In particular, if two or more courses in which grades below "B" are received, or if incompletes are not removed within one quarter, such instances are viewed as indications of serious scholastic deficiencies which require review by the appropriate academic unit and may be the basis for dismissal from the program.

Students are given written notification of approaching deadlines; all deadlines are determined by the date of entry into the program. Termination decisions are made by the Assistant Dean for the Doctoral Program, based upon recommendations by academic unit faculty or by a Progress Committee established by the Assistant Dean.

Appeals. A student may appeal a termination decision by requesting that the Dean of the School name a Faculty Committee to review the termination. The Dean may exercise his/her discretion as to the appropriateness of establishing such a committee.

Lower Division Courses (numbered 1-99)

1A-1B. Elementary Accounting. Prerequisite: Sophomore Standing. Course 1A is prerequisite to course 1B. An introduction to accounting theory and practice. The first quarter presents the recording, analyzing, and summarizing procedures used in preparing balance sheets and income statements. The second quarter includes payroll and tax accounting, partnership and corporation accounts, manufacturing and cost accounting, and supplementary statements.

Upper Division Courses (numbered 100-199)

108. Legal Analysis for Business Managers. Significance and growth of the law; the law in its relationship to business, with special emphasis on current problems; coverage of the law of contracts, agency sales, property, negotiable instruments, business organizations including the functions of inside and outside counsel and trade regulations.

111. Introduction to Management Science. Prerequisite: Mathematics 2, 4A-4B, course 115, or equivalent. Survey of management science from an applied rather than theoretical viewpoint. Emphasis on the formulation of mathematical models and the most basic techniques for obtaining useful results. Problem types discussed: allocation, competition, inventories, networks, project management, waiting lines, replacement, sequencing, transportation.
Mr. Bettman, Mr. Nelson

113A. Computer Data Processing. Computing and data processing concepts. Flowcharting and programming concepts. Programming problems may be assigned. Mr. Carmichael

113B. Computer Programming Methods. Prerequisite: Engineering 10 or course 113A or 404 or equivalent experience with some general purpose programming language. Use of PL/C and PL/1 for programming management applications. Sequential and nonsequential file processing. Data considerations. Report generation. Computational algorithms. Considerations of program structure. Extensive programming assignments. Mr. Carmichael, Mr. Sprowls

113C. Interactive Computing for Management. Prerequisite: Engineering 10 or course 113A or 404 or equivalent experience with some general purpose programming language. Conversational, interactive computing for management applications. Problem logic, array processing, file handling, formatting and report generation, graphics, and user dialogues are covered. Examples are drawn from various aspects of management. Extensive programming assignments (using APL) are required. Mr. McLean

115. Business Statistics. Prerequisite: Mathematics 2, 4A-4B, or equivalent. Elements of probability, probability distributions, estimation and confidence intervals, tests of significance and of hypotheses, linear regression and correlation, time series analysis, and principles of index numbers. Applications to the analysis and decision-making aspects of everyday business problems.

120. Intermediate Accounting. Prerequisite: 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. Prerequisite: course 120, course 115 or 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. Prerequisites: course 120; course 115 or Economics 40 or equivalent; Economics 101A. A study of the forms and sources of financing business firms, large and small, corporate and noncorporate. The emphasis is on financial planning and developing judgment in formulating decisions on financial problems. Financial problems are also considered in their social, legal, and economic effects.
Mr. Andersen, Mr. May

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. Eiteman, Mr. Shelton

135. Principles of Insurance. Basic principles of risk and insurance and their applications to business management and personal affairs. Analysis of concepts and methods of handling risks; insurance carriers, contracts, and underwriting; loss prevention and settlement; government insurance programs; economic functions of insurance. Mr. Hofflander

140. Elements of Production and Operations Research. Prerequisite: course 111 or equivalent. Principles and decision analyses related to the effective utilization of the factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. The study of production organizations, analytical models and methods, facilities design, and the design of control systems for production operations.

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. Fogel, Mr. Hutchinson, Mr. Mitchell

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 is placed on decision making as it relates to appraising, building, financing, managing, marketing, and using urban property.
Mr. Case, Mr. Clapp, 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. Mr. Culbert, Ms. Lasko, Mr. Massarik

190. Management Theory and Policy. Prerequisite: course 130. A study of the basic concepts and theory of management. Emphasis is on an operational analysis of the manager's role in all types of organizations. The course deals with 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 to be covered may change each quarter depending on particular interest of instructors or students. May be repeated for credit.

Graduate Courses (numbered 200-299)

Graduate courses are ordinarily open to students admitted in graduate standing. As a condition for enrollment, the student 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. Prerequisite: course 405 and Economics 145 or consent of instructor. Contemporary business economic principles of resource allocation and the price system are developed. Classical optimization and comparative static techniques are set forth and applied to the models of consumer choice and firm and general production-exchange equilibrium models. Mr. Granfield, Mr. Osborne

200B. Techniques of Business Economic Analysis: Econometrics. Prerequisite: consent of instructor. Standard topics in applied econometric modeling are developed. The assumptions underlying the classical normal linear regression model, special problems in application, and interpretation of results are stressed. Practical applications are extensively developed in student projects. Mr. Kimbell, Mr. Mayers

201A. Business Forecasting. Prerequisite: courses 100, 101, or 405, 406 and 115 or 402. The role of business forecasting in managerial planning. Principles and methods of forecasting. Evaluation of the reliability of existing forecasting techniques. Covers both short-term and long-term forecasting of industry, regional, and national business trends.
Mr. Kimbell, Mr. Norton, Mr. R. Williams

201B. Industry Forecasting. Prerequisite: course 201A. Evaluation of various methodologies found useful in preparing industry forecasts; differences between short- and long-range forecasting techniques, etc. Mr. Andersen, Mr. Kimbell

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.
Mr. Granfield, Mr. Kimbell, Mr. R. Williams

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. Treats policy formation and administration as well as design. Mr. Granfield, Mr. Nicols

202A. Economic Theories of Business Behavior: Marginal, Managerial, and Behavioral. Prerequisite: course 200A. The economic behavior of the firm and firm groups is considered. 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.
Mr. Nicols, Mr. Weston

202B. Principles of Industrial Organization. Prerequisite: course 200A. The course develops analysis principles necessary for understanding the economic structure and behavior of industries. Topics range from substitutability criteria for industry definition and a comparison of alternative classification schemes to the relationships among industry structure, conduct, and performance. 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 are investigated. Implications of such industry characteristics are derived for decisions having to do with firm output, prices, advertising, and research/development.
Mr. Nicols, 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.
Mr. Granfield, Mr. Nicols, Mr. Weston

M203A. Economics of Decision. (Same as Economics M203A.) Prerequisite: rudiments of economic theory, calculus, and probability and statistics. Norms and facts of decision making in 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.) Prerequisite: rudiments of economic theory of the firm, calculus, and probability and statistics; course M203A, or consent of instructor. Optimal decision and information rules. Amount, cost, and value of information. Risk version, stochastic dominance and their impact on economic decisions in a stochastic environment.

M203C. Economics of Organization. (Same as Economics M203C.) Prerequisites: course 203A-203B. Rational models of teams. Relation to the theory of games.

205A. International Business Economics. Prerequisite: courses 405, 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 are studied for their influence on the organization and operation of the international corporation.
Mr. R. H. Mason, Mr. Mitchell, Mr. Schöllhammer

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.
Mr. Nicols, Mr. Osborne, Mr. R. Williams

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. Mr. Osborne, Mr. R. Williams

205D. The Management of Economic Development in Latin America. Discussion, 3 hours. Prerequisite: Economics 1 or 2 or Management 405. An introduction to economic development in Latin America. Consider the problem of pupilation, human resources development, agriculture, and land reform. Examines various industrialization strategies, the role of foreign trade, foreign investment, and economic intrigration in the area's development. Analyzes role of inflation and financial intermediation in capital development.

207A. Resource Administration of Nonmarket Activities. Prerequisite: courses 405 and 406 or consent of instructor. Examination of the proper economic role of nonmarket institutions, and of the allocation of societal resources between the public and private sectors via market and nonmarket mechanisms. Definition and application of economic efficiency to resource allocations. Mr. Granfield, Mr. Nicols

207B. Public Services and Private Functions. Prerequisite: 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.
Mr. Granfield, Mr. Osborne

208. Selected Topics in Business Economics. Prerequisite: consent of instructor. Special topics in business economics. Current development in theory or practice in business economics. May be repeated for credit.

210A. Mathematical Programming. Prerequisite: Mathematics 115. 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. Prerequisite: Mathematics 150A or Engineering 120A. Sequential stochastic (usually Markovian) decision processes in discrete and continuous time, emphasis is on problem formulation and the characterization and computation of optimal policies, often via dynamic programming; application 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 programs. The emphasis will be on fundamentals, efficient computational methods, and the keys to successful practical applications.
Mr. Geoffrion

211A. Nonlinear Mathematical Programming. Prerequisite: Mathematics 32A and course 210A or the 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 the 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. Prerequisite: Mathematics 31B and course 407. A broad survey of deterministic models, how to solve them, and their application in the management sciences. Solution techniques covered include linear programming, network optimization, integer programming, non-linear programming, and dynamic programming. Application areas covered include allocation, corporate planning, distribution, finance, operations management, production, and project management.
Mr. Erlenkotter, Mr. Geoffrion

212B. Management Science Models II. Prerequisite: Mathematics 32A, course 212A, or equivalent. A broad survey of non-linear, 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, and 212B. In-depth review of actual management science applications. Emphasis is placed on the professional skills needed for successful practical applications.

213A. Intermediate Probability and Statistics. Prerequisite: course 402 or the equivalent. An introduction to probability theory and hypothesis testing as applied to management. SAS programs will be used in this course and its sequels.
Mr. Jones, 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 non parametric statistics, all as they apply to management studies.
Mr. Cooper, Mr. Jones, Mr. Hanssons

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 is 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.
Mr. Jessen

216A. Simulation of Operational Systems. Prerequisite: courses 113B, 402, or equivalent background in batch computing (APL is not suitable) and statistics. 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 will be 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. (¼ to 1 course) 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. (¼ to 1 course) Prerequisite: consent of instructor. Special topics in statistical methods. Current developments in statistical theory and practice. Analysis of recent literature. Topics and instructors will be announced when they become known. May be repeated for credit.

218D. Current Problems in Management Science. (¼ to 1 course) 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.

218XYZ. Current Issues in Management Science. (¼ to 1 course) 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 an emphasis on the pronouncements of the Financial Accounting Standards Board, the Securities and Exchange Commission, and other authorities.
Mr. Buckley, Mr. Manegold, Mr. Wagner

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 acconting with an emphasis on the pronouncements of the Financial Accounting Standards Board, the Securities and Exchange Commission, and other authorities.
Mr. Buckley, Mr. Manegold, Mr. Wagner

220C. Advanced Financial Accounting. Prerequisite: course 220B or consent of instructor. In addition to providing a continuation of 220B, this course gives special attention to a range of topics which include accounting for partnerships, mergers, combinations, and parent-subsidiary relationships. Litigation procedures are reviewed including reorganizations, receiverships, and bankruptcy. Ms. Kelly

221. Current Issues in Accounting Information Systems. Prerequisite: consent of instructor. Using a colloquium format, the course provides a forum for the discussion of contemporary issues in accounting and information systems. Drawing on prominent speakers in the field, the course requires the student to formulate a position paper on each topic presented.

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. Kelly, Mr. McDonough

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. Kircher

224A. Computer Systems. Prerequisite: course 225A and either 113B or 113C 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. Case materials and/or actual examples are used.
Mr. Lientz

224B. Management of Computer-Based Information Systems. Prerequisite: course 224A or consent of instructor. An in-depth coverage of the problems in managing computer-based information systems. Focuses 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, are stressed.
Mr. McLean

224C. Systems Analysis for Computer-Based Information Systems. Prerequisites: courses 224A and 225A or consent of instructor. The detailed design and specification of computer-based management information systems. Includes studies of existing systems, economic and organizational analyses of alternatives, and tools for determining user requirements. Case materials and/or actual examples are used. Mr. Chen, Mr. Lientz, Mr. Sprowls

224D. Generalized Data Base Management Systems. Prerequisite: course 113B or 113C or consent of instructor. Examines the features and capabilities of generalized data base management systems. Includes system classification, comparison of software features, and evaluation of specific systems. Emphasis is upon management uses of such systems. A field study project may be required.
Mr. Chen, Mr. Sprowls

224E. Computer Simulation for Management. Prerequisite: Engineering 20 or course 113B or 113C or consent of instructor. Introduction to computer simulation and to general purpose simulation languages (e.g., GPSS, SIMSCRIPT, DYNAMO). Emphasis upon the managerial use of simulation and the development of computer-based models for problem solving and policy analysis. Programming assignments are included. Mr. Chen

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.
Mr. McLean, Mr. Sprowls, 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. Flamholtz, 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: open primarily to Ph.D. candidates or with 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 doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

225X-225Y-225Z. Current Research in Information Systems. (¼ course, ¼ course, ½ course) Discussion, two hours. Prerequisite: enrollment in Ph.D. program. 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. Graded S/U only.

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; and accounting influences on economic development.
Mr. Buckley, Mr. Kircher

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.

229A. Accounting Theory. Prerequisite: course 220B. A survey of accounting literature, with emphasis on the development of basic accounting concepts. An attempt is made to explain contemporary practice as it has evolved in accordance with basic theory and expanding demands for accounting information.
Ms. Kelly, Mr. Kircher

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. Buckley, Mr. Flamholtz, Mr. Manegold

229C. Special Topics in Accounting. Prerequisites: open primarily to Ph.D. candidates or with 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 doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

229X-229Y-229Z. Accounting and Information Systems Workshop. (¼ course, ¼ course, ½ course) Discussion, two hours. Prerequisite: Doctoral Standing. The course is 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 are encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. Graded S/U only.

230. Theory of Finance. (Formerly numbered 231B.) Prerequisite: course 408. Concerned with decision making under uncertainty, the theory of asset prices, and the efficiency of capital markets. Develops the most recent theoretical constructs and applies them to fundamental issues in corporate financial management such as capital budgeting, capital structure, and dividend policy.
Mr. Copeland, Mr. Geske, Mr. Mayers

231A. Profit Sector Financial Policy. Prerequisite: course 230. Identifying and solving financial problems through the use of cases. Stresses the application of financial theory and financial techniques to business problems, using written reports and classroom discussion. Mr. May, Mr. Mayers, Mr. Weston

231B. Nonprofit Sector Financial Policy. Prerequisite: course 408. Identifying and solving financial problems for all types of nonprofit organizations through use of cases. Stresses possible application of financial theory for profit-oriented firms. Particular attention to unique problems of resource allocation when market valuation cannot be used as a criterion.
Mr. Eiteman

231C. Working Capital Management. Prerequisites: courses 230 and 231A. More detailed advanced coverage of the short-range problems of financial management. Coverage of current assets, current liabilities, and their interrelationships.
Mr. Eiteman

231D. Applications of Quantitative Methods in Finance. Prerequisites: course 230 and other 230-level seminars. Applications of multiple regression, mathematical programming, and stochastic processes to more complex problems of financial decision making. Comparison of solutions from alternative quantitative methods. Mr. Mayers

232A. Security Analysis. Prerequisite: course 230. Primarily a course in stock market investing, but approach is applicable to all investment assets. Includes techniques of security analysis and security valuation based on financial statements of the organization. Mr. Eiteman, Mr. Roll, Mr. Shelton

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. Geske, Mr. Masulis

233A. Money and Capital Markets. (Formerly numbered 230A.) 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. Andersen, Mr. Roll

233B. Financial Institutions. (Formerly numbered 230B.) Prerequisites: courses 230 and 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. Roll, Mr. Shelton

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. Masulis, Mr. Roll

234A. Multinational Business Finance. (Formerly numbered 233A.) Prerequisites: courses 205A and 408; in addition, course 230 is recommended for Finance majors. Financial problems in the management of multinational businesses. Included are the international financial environment, problems surrounding the decision to commit long-term capital to an international venture, and financial techniques for the daily operation of a multinational firm.
Mr. Eiteman, Mr. Weston

234B. Advanced Studies in International Finance. Prerequisites: courses 230 and 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. Mr. Eiteman, Mr. Weston

235A. Problems in Insurance Management. Prerequisite: course 135 or consent of instructor. Advanced consideration of the problems of insurance management. Treats the actuarial, underwriting, investment, marketing, and regulatory problems relating to insurance activities. Mr. Hofflander

235B. Risk and Risk Bearing. Prerequisite: course 135 or 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 and consent of instructor. Course intended for master's students. Selected topics in finance theory, empirical studies, and financial policy. May be repeated for credit under different Finance faculty members.

239A. Theory of Exchanges under Uncertainty. Prerequisites: course 230 and consent of instructor. Foundations of the theory of exchange are developed as an introduction to theoretical literature on the pricing of capital assets. Course is primarily intended for doctoral students, but well-prepared master's students may find the course useful in their career preparation. Mr. Geske, Mr. Roll

239B. Theory of Investment under Uncertainty. Prerequisite: courses 230 and 239A or consent of instructor. Foundations of theory of firm capitalization and investment decisions are developed with special attention to questions of exchange and allocative efficiency. Course primarily intended for doctoral students, but well-prepared master's students may find the course useful in their career preparation.
Mr. Copeland, Mr. Masulis, Mr. Mayers

239C. Empirical Research in Finance. Prerequisites: course 230, training in econometrics, and consent of instructor. In-depth study of empirical research in field of finance with emphasis on market efficiency, capital asset pricing, and option pricing. Course is primarily intended for doctoral students, but well-prepared master's students may find the course useful in their career preparation. Mr. Roll

239D. Doctoral Seminar in Finance. Prerequisites: course 230 and courses in the 239 series. Course intended for doctoral students. Advanced topics in finance theory and empirical research. May be repeated for credit under different Finance faculty members.

239X-239Y-239Z. Finance Workshop. (¼ course, ¼ course, ½ course) Discussion one and one-half hours. Prerequisite: Doctoral Standing. The course is 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 are encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. Graded S/U only.

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. Buffa, Mr. Nelson

240B. Scheduling and Control of Operations. Prerequisite: course 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, Mr. Erlenkotter

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. Mr. Davis

242A. Planning for Facilities Systems. Prerequisite: course 212A or equivaleht. 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 upon characterizing the form of optimal policies and efficient computational methods. Both deterministic and stochastic and discrete and continuous time models are considered.
Mr. Lippman

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 studied include classical models, recent heuristic approaches, current research in coordinated interaction of computer models, and man-machine interaction. Mr. Nelson

244. Policy Issues in the Management of Operations. Prerequisite: second-year status. Case analyses centering on the operations phases of enterprises. Cases selected are at the policy level and are drawn from service, nonmanufacturing, and manufacturing industries. Mr. Buffa

245A. Special Topics in Operations Management. Studies of advanced subjects of current interest in operational management. Emphasis is on recent developments and the application of specialized knowledge to operational problems. Topics change each offering and, in the absence of significant duplication, the course may be repeated.

245B-245C. Survey of Operations Management. Prerequisite: Enrollment in the master's or the doctoral programs. Survey of the research literature in operations management. Seminar reports dealing with special topics.

246A. Policy Analysis in the Public/Not-for-Profit Sector. Prerequisite: completion of the management analysis requirement for the MBA Program. Application of several analytic techniques for policy analysis. Specific topics include forecasting/scenario writing, multiple objective decision making, cost analysis, risk/benefit analysis, and social experimentation. Limitations of methodologies will be examined and concepts illustrated through current applications and case studies. Mr. Andrews, Mr. Zumeta

246B. Budgeting and Resource Allocations in the Public/Not-for-Profit Sector. Prerequisites: courses 403, 408, and 246A, or consent of instructor. Examines resource allocation objectives/techniques used in federal, state, and local government. Budget analyzed as planning device, vehicle for allocational decision making, financial cohtrol mechanism, crucible for political choice. Provides some insight into staff functions performed by those responsible for resource allocation. Mr. Zumeta

246C. Policy Implementation in the Public/Not-for-Profit Sector. Prerequisites: courses 246A, 246B, or consent of instructor. Emphasizes problems, strategies, techniques for implementing policies within the organizational context. Relates public interest needs for accountability and responsibility to the organizational/managerial needs for security and advancement. Includes consideration of public sector entrepreneurship, public personnel management, public sector consulting. Mr. Zumeta

247A. Inter-Organizational 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 point of view of strategies for managing 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 is on recent developments and the application of specialized knowledge to public/not-for-profit problems. Topics change each offering and, in the absence of significant duplication, the course may be repeated for credit.

250A. Human Resource Management. Prerequisite: consent of instructor. First part of a two-course sequence focusing upon the processes and problems of managing human resources. Topics include people as resources; nature of human resource management; human resource planning; designing and organizing tasks and roles; and acquiring and allocating people. Mr. Fogel, Mr. Massarik

250B. Human Resource Management. Prerequisite: course 250A. Topics include development and training; human resources accounting; behavioral foundations of participative management; motivation, productivity, and satisfaction; designing reward systems; and evaluation of organization effectiveness. Emphasis on understanding, predicting, and influencing human behavior in organizations.
Mr. Massarik

250C. Systems of Employee-Management Participation. Prerequisite: consent of instructor. Course 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 will be covered.
Mr. Adizes

251. The Management of Labor Relations. Consideration, at an advanced level, of the collective bargaining process, the labor-management agreement, the administration of the contract, and the impact of public policy on the management of industrial relations. Case studies, field trips, and visiting lecturers will be part of the seminar curriculum.
Mr. Hutchinson

252. Law and Governmental Policy in Industrial Relations. Prerequisite: course 409. Governmental policies on employer-employee relations; historical background; constitutional and common law principles; application of Taft-Hartley, Labor Reform, Antitrust, Anti-Injunction, Fair Labor Standards, Workmen's Compensation, and other acts; trends and proposed legislation on labor-management affairs. Mr. Fogel, Mr. Mitchell

253A. Negotiation and Conflict in Organizations. Prerequisite: Graduate Standing. The occurrence and management of differences throughout the organization. Furnishes amultidisciplinary understanding of conflict phenomena in general, plus an appreciation of critical parameters shaping conflict in specific organizational arenas. Also reviews the arsenal of conflict-management techniques.

253B. Conflict Resolution in Labor-Management Relations. Prerequisite: Graduate Standing. Analysis of conflict in the employment relationship. Theoretical and empirical findings are examined. Principles and philosophies that underlie resolution of labor-management impasses are considered with emphasis on grievance procedures, arbitration, mediation, and factfinding. Mr. Prasow

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. Fogel, Mr. Mitchell

255. Comparative Industrial Relations. Prerequisite: course 409 or an elementary knowledge of labor economics. At national and international level, historical and contemporary analytical comparison of industrial relations systems within their political, social, and economic environments. Included are: 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

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 is on negotiations and group relationships rather than on public personnel administration. Mr. Prasow, and the Staff

258. Selected Topics in Industrial Relations. (¼ to 1 course) Prerequisite: open primarily to Ph.D. candidates but also to others with 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 doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

259A. Manpower Planning and Evaluation. Prerequisite: course 254 recommended. The developments of programs and practices to meet manpower goals of individual labor force participants, business firms, and communities. Examination of techniques for the evaluation of such programs.
Mr. Fogel, Mr. Mitchell

259B. Utilization of Minority Manpower. Prerequisite: course 254 recommended. Examination of the experience of minority groups — blacks, Chicanos, women, teenagers — in labor markets and employing institutions (business firms, governments, unions). Consideration of equal employment opportunity programs in firms and of societal antidiscrimination programs. Guest speakers as appropriate. Mr. Fogel

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 will be made of case studies.
Ms. Scott, Mr. Weitz

260B. Marketing Strategy and Planning. Prerequisite: course 260A or consent of instructor. A framework for strategic marketing planning is developed. The cornerstones are the analysis of a few, yet powerful, conceptual frameworks which have broad application. Within the framework of the strategic marketing plan, key elements in the annual marketing planning process will be developed. Mr. Weitz

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 tradeoffs between alternative channel systems are discussed. Ms. Scott

261B. International Marketing Management. Prerequisite: course 260A or consent of instructor. Opportunities, distinctive characteristics, and emerging trends in foreign markets are analyzed. Includes 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, Mr. Weitz

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 wearfare, and leader pricing are also studied in relation to the price-making process. In addition, some attention is given to the price policies of individual firms in which these concepts are applicable. Mr. Nicols and the Staff

263A. Consumer Behavior. Prerequisite: course 411 or consent of instructor. A study of the nature and determinants of consumer behavior. Attention will be focused on the influence of socio-psychological factors such as personality, small groups, demographic variables, social class, and culture on the formation of consumers' attitudes, consumption and purchasing behavior. Mr. Bettman, Mr. Kassarjian, Mr. Lutz

263B. Theory of Marketing Stimulation. Prerequisite: course 263A. Analysis of factors influencing consumer demand. Techniques for stimulating demand are evaluated in relation to specific marketing objectives. Material is drawn from economics, psychology, sociology, anthropology, and marketing research. Mr. Kassarjian, Mr. Lutz

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. Currim, Mr. Kassarjian, Mr. Lutz

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 will be focused on models concerned with such problems as brand switching, media selection, pricing, competitive strategy, scheduling, allocation problems, and waiting time. Mr. Bettman, Mr. Currim, Mr. Hanssens

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. This course develops a framework for identifying and appraising alternative growth strategies of the firm. Product addition, modification, and deletion decisions are examined; and the processes by which these decisions can be made in an optimal manner are discussed.

266B. Advertising Policy. Prerequisites: courses 260A, 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. Lutz

266C. Sales Force Management. Prerequisite: course 411 or consent of instructor. This course develops a logical framework for the solution of problems in sales force management. It covers the role of selling in the marketing *mix,* the selling interaction, and key problems in planning, organizing, evaluating, and controlling the sales force. Mr. Weitz

267. Macromethodological Issues in Research on People. Prerequisite: consent of instructor. This course provides 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. Mr. Cooper

268. Selected Topics in Marketing. (¼ to 1½ courses) Prerequisite: course 260A or consent of instructor. A study of selected areas of marketing knowledge and thought. Specific subjects discussed to be changed 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. This course serves a two-fold purpose. At one level it serves as a mechanism to introduce the student to the development of marketing thought. In addition, issues pertaining to the general topic of theory development and testing are addressed. The general goal of the course is to prepare the student for conducting theoretically-grounded research in marketing. Mr. Lutz, Ms. Scott, Mr. Weitz

269B. Research in Marketing Management. Prerequisite: consent of instructor. Intended for doctoral 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 is examined critically. Both quantitative and behavioral approaches to studying these issues are reviewed. Mr. Weitz

269C. Quantitative Research in Marketing. Prerequisite: consent of instructor. The seminar is designed for doctoral 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. The purpose of the course is to review a range of quantitative models as applied in marketing research. Mr. Currim, Mr. Hanssens, Mr. Jones

269D. Behavioral Research in Marketing. Prerequisite: consent of instructor. Empirical research in consumer behavior is surveyed and critically evaluated from theoretical as well as practical perspectives. Course is intended for doctoral students who will be conducting research in consumer behavior or related areas. Mr. Bettman, Mr. Lutz, Ms. Scott

269E. Special Research Topics in Marketing. Prerequisite: course intended for doctoral students. 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. (¼ course, ¼ course, ½ course) Prerequisite: enrollment in Ph.D. program. This course is a year-long workshop series required of all students during the first two years of their doctoral work. The series consists of a number of leading scholars, in marketing and related disciplines, who make presentations to marketing faculty and doctoral students. Active participation and intellectual interchange are the goals of this workshop, which helps the student to gain a richer perspective on the field of marketing.

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. The aim is to explore 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-a-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. Mr. Adizes

274. Current Issues in Arts Management. Prerequisite: consent of instructor. The seminar of the final quarter is viewed as the major vehicle integrating the academic program and current issues in the management of artistic institutions. Relevant combinations of lectures, discussions, case studies, and team research projects are employed.

275A. Urban Issues and Problems. Prerequisite: course 175 or consent of instructor. Study of urban problems and issues including demand for and supply of private and public goods, environmental pollution, transportation, recreational facilities, poverty, housing the poor, city size and efficiency, urban sprawl, taxation, new towns, real estate and building industries.

275B. Urban Land Economics. Prerequisite: course 175, 405, or consent of instructor. Introduction to development and use of economics and management principles in identifying and analyzing the determinants of urban land use and land values, public policies affecting the urban land market, and the private sector's role in shaping the urban environment. Mr. Mittelbach

275C. Alternative Urban Futures. Prerequisite: consent of instructor. The use of economic tools and business techniques for planning and forecasting alternative urban futures. Urban and World Dynamics models are used to analyze future urban life under various assumptions about the shape, structure, and functions of future cities. Mr. Case, Mr. Mittelbach

276A. Theory of Urban Property Valuation. Prerequisite: course 408 or equivalent. Systematic analysis of the elements of real property values and of the allocation of land uses over urban space. Students may use APL programs to investigate and critically evaluate methods of valuation and allocation. Mr. Case, Mr. Mittelbach

276B. Comparative and International Urban Land Studies. Analysis of private and public decision making shaping urban development and redevelopment in selected countries. Emphasis on the economic, social, and institutional factors which determine urban growth, structure, and patterns on the land in developed and underdeveloped nations. Mr. Case, Mr. Mittelbach

276C. Urban Dynamics: Degeneration and Regeneration. Prerequisite: consent of instructor. Seminar which identifies, analyzes and evaluates problems and solutions concerning urban blight, rehabilitation, redevelopment, new towns, inner-city revitalization, and inter-governmental relations in the American city, with particular emphasis on the role of private enterprise in dealing with these problems. Mr. Mittelbach

277A. Housing Economics. Prerequisite: consent of instructor. Consideration of determinants of private and public demand for housing. Housing programs and relationships between construction and economic trends are examined in detail. Mr. Case, Mr. Granfield, Mr. Mittelbach

277B. Housing Policy. Prerequisite: consent of instructor. U.S. and foreign housing programs. Housing low-income groups, new town legislation, improving environment, urban renewal and development and related topics. Criteria for assessing public policy, policy implementation, policy and stages of national economic development, the role of private enterprise. Mr. Case, Mr. Mittelbach

278A. Urban Real Estate Financing and Investing. Prerequisite: consent of instructor. Theoretical and pragmatic analyses are used to determine the differences between real property and other investments. Real estate investment opportunities are evaluated for their effectiveness in balancing personal and business investment objectives and public land use goals. Mr. Case, Mr. Mittelbach

278B. Sources, Uses, and Flows of Real Estate Capital. Identification and analysis of sources and uses of real estate credit and equity funds. Policies and programs of lenders are related to real estate construction and market trends, and governmental economic and housing policies and programs.
Mr. Case, Mr. Mittelbach

279A. Special Studies in Urban Land Economics. Open to master's or doctoral candidates working on thesis or dissertation related research. May be repeated for credit.

279B. Selected Topics in Urban Land Economics. Open to all graduate students who wish to pursue a particular topic in housing, real estate, or urban land economics in depth on an individual or cooperative basis. May be repeated for credit.

279X-279Y-279Z. Urban Research and Development. (½ to 1 course) Prerequisite: graduate standing or consent of instructor. Exploration of urbania and its problems; prospects and prescriptions for the delivery of a quality life. The exploration will be both macroscopic and microscopic as related to problems of a selected urban area.

280A. Important Studies in Human Systems. Prerequisite: enrollment in Ph.D. program or consent of instructor. Surveys seminal studies of human systems. Summarizes and critiques literature focal to the evolution and current status of the field. Reviews such topics as personality, motivation, group and intergroup behavior, systems theory, and organizational design and development. Mr. McKelvey

280B. Survey of Research Philosophies and Methods. Prerequisite: enrollment in Ph.D. program or consent of instructor. Offers a broad introduction to objectivist and subjectivist philosophies of science, and the psychology and sociology of science. Critiques laboratory and field experiments; field studies, analytical and descriptive methods; interview, participant observation, questionnaire and unobtrusive methods of data collection. Mr. Cooper, Mr. Massarik

280C. Personal and Professional Development. Prerequisite: enrollment in Ph.D. program 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, Ms. Lasko

280D. Research Design for Human Systems Studies. Prerequisite: course 280A, 280C, or consent of instructor. Acquaints students with 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.
Mr. Cooper

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 doctoral research paper.
Mr. McKelvey

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. Ms. Lasko

281A. Socio-Technical Systems. Prerequisite: graduate standing. Introduces systems concepts and views work organizations as interacting social and technical systems open to forces from the surrounding environment. Focus is on developing the socio-technical systems analytic approach and understanding the advantages of this approach for designing and managing organizations. Mr. McKelvey

281B. People in Organizations. Prerequisite: Graduate Standing. Introduces different philosophical perspectives for understanding human behavior. Theories and concepts important for understanding human behavior in organizations are presented as well as managerial implications of individual, group, and social behavior. Special attention given to knowledge about satisfaction motivation and productivity in organizations. Mr. Cooper, Mr. Massarik

281C. Situational Factors in Management. Prerequisite: Graduate Standing. Applies 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. Develops a diagnostic way of thinking that is fundamental to managerial effectiveness in diverse organizational situations.
Mr. McKelvey

282. Task Group Processes. Prerequisite: courses 281A, 281B, or consent of instructor. Focuses on the structures, processes, and interrelations of work groups in socio-technical systems. Emphasizes 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 Socio-Technical Systems. Prerequisite: course 281A or consent of instructor. Focuses on the complexity and uncertainty of organizational environments. Analyzes environments along socio-cultural, political, and economic dimensions, their interrelationships, and their relations to technology. Diagnoses 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. Develops specific methods ranging from the micro-design of jobs to the macro-design of total organizational structures. Special emphasis on socio-technical and differentiation/integration models. Mr. Davis

284B. Organization Development. Prerequisite: course 281B or consent of instructor. Analyzes effects of managerial practices on individual self-fulfillment and organizational effectiveness. Presents theories of organization change and the action-research methods of organization development practitioners. Merges theory with practice through seminar discussions of field observations. Mr. Massarik, Mr. Raia

285A. Leadership, Motivation, and Power. Prerequisite: course 281B or consent of instructor. Studies theoretical and practical approaches to influencing and motivating people. Explores the relative effectiveness of various leadership styles, different motivation theories, and power tactics from a managerial point of view. Uses experience based learning methods to aid diagnosis and understanding of one's own influence styles. Mr. Culbert, Mr. Massarik

285B. Managerial Interpersonal Communication. Prerequisite: course 281B or consent of instructor. Focuses on organizational, interpersonal, and personality factors affecting managerial communications. Analyzes styles and modes of communication in one-to-one, group, and indirect communication settings. Offers opportunities to deepen understanding of one's own communication styles and skills.
Ms. Lasko

287. Sensitivity Training Groups and Their Facilitation. Prerequisite: consent of instructor through prior application in Department. Develops cognitive and experiential understanding of the dynamics of sensitivity training groups and their facilitation. Analyzes relevant theory, research findings, and case studies; stresses translating these inputs into practice.
Ms. Lasko, Mr. Massarik

288A. Special Studies in Managing Organization Behavior. Prerequisite: open primarily to MBA students but also to others with 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 MBA students and the faculty. May be repeated for credit.

288B. Selected Topics in Behavioral Science. Prerequisite: enrollment in Ph.D. program or consent of instructor. Focuses on philosophies and theories of human behavior fundamental to the study of individual, group, organizational, and cultural behavior. Explores in depth selected theoretic positions, extending and consolidating behavioral science knowledge and applications. May be repeated for credit.

288C. Current Issues in Socio-Technical Systems and Organization Design. Prerequisite: enrollment in Ph.D. program or consent of instructor. Covers current topics in the analysis and design of organizations as socio-technical systems engaged with various technologies and environments, emphasizing design approaches emanating primarily from Europe and the United States. Includes 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: enrollment in Ph.D. program 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: enrollment in Ph.D. program or consent of instructor. In-depth treatment of organizations as units of analysis. Emphasizes 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: enrollment in Ph.D. program or consent of instructor. Explores psychological and social psychological aspects of human behavior and performance in organizations. Covers 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: enrollment in Ph.D. program 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. (¼ course, ¼ course, ½ course) Two hours discussions. Prerequisite: Doctoral Standing. This course is 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. Graded S/U only.

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, Mr. Sedgwick

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. Mason, Mr. Schöllhammer

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 socio-technical 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. Mr. Andrews

292D. Management in the Not-for-Profit Sector. Prerequisite: Graduate Standing. A study of the not-for-profit sector, the institutions within it, and its relationship to the governmental and business sectors. Special emphasis on management problems peculiar to the not-for-profit sector. Mr. Case

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. Mr. Steiner

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. The student is confronted with complex company situations to develop ideas essential to overall managerial direction. Mr. Steiner

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 are studied for developing and evaluating alternative managerial solutions which permit organizations to assist in improving current and future environmental quality. Mr. Case, Mr. Rumelt, Mr. Steiner

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 and the Staff

295B. Small Business Management. Prerequisite: consent of instructor. Exploration of crucial aspects in managing small business enterprises. Emphasis is placed 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 and the Staff

296A. International Business Management. Prerequisite: course 205A or consent of instructor. Identification, analysis, and resolution of managerial issues of policy and action within the context of an international corporation, with emphasis on problems of adaptation to different sociological, cultural, legal, political, and economic environmental characteristics. Mr. Mason, Mr. Schöllhammer

296B. International and Comparative Management Research. Prerequisite: enrollment in the Ph.D. program or consent of instructor. In-depth study of theory and research pertaining to international business and comparative management. Emphasizes recent research developments and methodological issues. Imparts knowledge on the design and the conduct of international/comparative management research. Mr. Goodman

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. Mr. Schöllhammer

297B. International Business Policy. Prerequisite: course 205A and 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 will be applied to a series of complex cases and simulations of international business operation. Mr. Schöllhammer and the Staff

297C. International Business Law. Prerequisites: courses 205A and 296A. Legal environments in which international business operates; overseas business relationships and organizations; antitrust, taxation, transfer of capital and technology regulations; patent, trademark, and copyright safeguards; arbitration of international business disputes; expropriation of foreign investments; international business and government relations.

297D. International Business Negotiations. Prerequisite: course 296A. Exploration of international business negotiations of multinational enterprises with governmental agencies and foreign-based firms on a wide range of issues such as establishment/dissolution of joint ventures, extent of foreign ownership/management control, terms/conditions for technology transfer, investment incentives. Mr. Schöllhammer and the Staff

298A. Special Topics in Management Theory. Prerequisite: open primarily to Ph.D. candidates or with consent of instructor. An examination in depth of problems or issues of current concern in management theory. Emphasis on recent contribution to theory, research, and methodology. Of special interest to advanced doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

298B. Special Topics in International and Comparative Management. Prerequisite: open primarily to Ph.D. candidates or with 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 doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

298C. Special Topics in Socio-Technical Systems. Prerequisite: open primarily to Ph.D. candidates or with consent of instructor. An examination in depth of problems or issues of current concern in socio-technical systems. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

298D. Special Topics in Management. (¼ to 1 course) Prerequisite: open primarily to Ph.D. candidates or with 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 doctoral candidates, the academic staff, or distinguished visiting faculty. May be repeated for credit.

298X-298Y-298Z. Management Strategy and Policy Workshop. (¼ course, ¼ course, ½ course) Discussion: 3 hours. Prerequisite: Doctoral Standing. The course is 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 are encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. Graded S/U only.

299R. Research Methods in Management. Prerequisite: Ph.D. candidate. Provides feedback and evaluation of papers prepared for the research requirement. Quarterly meetings will be held 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.

Professional Courses (numbered 400-499)

The following courses in the professional series are acceptable toward the MBA, MS, 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 only.

***1401. 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 in which emphasis is upon application to business problems.

403. Managerial Accounting. Prerequisite: Graduate Standing. An introduction to fundamental systems and procedures in financial and managerial accounting, with an emphasis on income measurement, marginal analysis, standard and direct costing.

404. Managerial Computing. Prerequisite: Graduate Standing. An introduction to the use of computers for management applications. Computer hardware, software, and programming concepts are discussed. Programming problems are assigned, using both batch-type (PL/C) and interactive (APL) languages.

405. Managerial Economics: The Organization. Analysis of decision making in the firm, competitive policies and market structure, revenue and cost behavior.

406. Managerial Economics: Forecasting. Prerequisite: Graduate Standing. Sales, costs, and profit forecasting. General business forecasting and cyclical mechanisms.

407. Managerial Model Building. Prerequisite: courses 400, 402, or equivalent. A survey of the uses of formal modeling approaches in managerial decision making. Emphasis is on model types and formulations, and use of solutions obtained from computer routines. Application areas examined include finance, marketing, production, and public systems.

408. Managerial Finance. Prerequisite: course 403. 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.

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 111 or 407 or equivalent. Principles and decision analyses related to the effective utilization of the factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. The study of production organizations, analytical models and methods, facilities design, and the design of control systems for production operations.

411. Elements of Marketing. A study of institutions and functions as they relate to the distribution of goods and services, emphasizing the viewpoint of management in the planning, execution, and measurement of marketing activities and strategies, and the viewpoint of society in the analysis of cost, impact, and results.

412. Management of Organizations. Prerequisite: graduate status. 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.

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.

423. Advanced Management Theory. Advanced study of management theory in formally organized enterprise through significant readings; discussing advanced approaches and techniques developed from applying theory; using theory to integrate methods and findings of quantitative and behavioral sciences; lectures on sophisticated application of management theory in practice. Mr. McKelvey, Mr. Raia

430. Introduction to Managerial Statistics. (½ course) Prerequisite: Graduate Standing. An introduction to probability theory and classical statistics. Statistical description of data. Basic concepts of probability theory. The use of sampling for decision making. Interpretation of tests of hypotheses. Overview in managerial terms of more advanced statistical methods.

431A. Introduction to Model Building. (½ course) Prerequisite: Graduate Standing. An introduction to formal model building. Use of mathematical models as system descriptors. Characteristics of the major "classes" of models. Formulation of problems in terms of mathematical models. Interpretation of solutions provided by the computer.

433. Computing Laboratory. (½ course) Prerequisite: Graduate Standing. Use of the computer as an aid in solving management-related problems; interactive, time-shared processing utilizing remote terminals; and the APL computer language

434. Managerial Accounting and Finance. Prerequisite: Graduate Standing. An introduction to the fundamentals of accounting and finance with emphasis on the preparation of basic financial statements and the techniques of financial analysis.

435. Organizational Behavior and Management Processes. Prerequisite: Graduate Standing. A system approach to the theory and practice of management in complex organizations. Provides an integrated view of human behavior and managerial processes in a dynamic organizational society.

436. Policy and Organizational Environment. Prerequisite: course 441. Environmental settings of organizations; interrelationships among and roles of various sectors of society with special emphasis on business; issues facing managers and management-related specialists; and formulation of organizational strategies and policies.

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 are studied.

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 second year. Supervised study of an organization including establishment of client organization/student consultant relationship, identification of problem, design of study, collection and analysis of data, development and reporting of implementable recommendations. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for both quarters of work.

450. Field Work in Behavioral Science Management Development. (1 or 2 courses) Prerequisite: course 287 and consent of instructor. Supervised practical work in all phases of laboratory education for management development, such as sensitivity training laboratories, creativity and personal growth laboratories, simulated managerial behavior laboratories, etc. Mr. Culbert, Ms. Lasko, Mr. Massarik

451. Field Work in Organizational Development. (½ to 3 courses) Prerequisite: courses 450, 284B, or consent of instructor. Supervised practical field work in organizational development consultation in interpersonal, group, intergroup, total organization, and interorganizational settings.

452. Field Work in Technical Assistance for Minority Business Enterprise. (½ to 1 course) 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. Field Work in Arts Management. (1 to 3 courses) 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. Field Work in Organizations. Prerequisites: completion of two quarters of the MBA Program and consent of the supervising faculty and the Director of the MBA Program. Supervised, non-paid practical experience or fieldwork in an organization as an intern or fellow. Execution of pre-determined assignment(s) pursuant to a defined program of study which may include formal classwork. May be taken only once for credit.

495. Preparation for Teaching Business and Management. Prerequisites: Graduate Standing and consent of instructor. Study of problems and methods in the teaching of management. Includes seminars, workshops, and practice teaching. Cannot be used to fulfill M.B.A., M.S., or Ph.D. requirements. Graded S/U. Mr. Frand, Mr. Lasko

Executive M.B.A. Program

Admission to the Executive M.B.A. Program is the prerequisite for enrollment in the following courses:

461. Managerial Problem Solving. (½ course) Lecture, two hours. Prerequisite: Executive MBA Program. This course will focus on individual problem-solving and decision-making skills. Alternative conceptual frameworks will be presented for augmenting the individual's diagnostic and decision-making skills. Readings, cases, decision simulations and discussions will be used to explore the areas of: charting job and career progress, working with others and shaping the work culture. Mr. Mason

462. Economic Analysis for Managers. Lecture, four hours. Prerequisite: Executive MBA Program. This course focuses on policy-oriented problems in anti-trust, tax securities and environmental regulation. Concepts of microeconomic theory would be illustrated. Topics would include traditional anti-trust regulations, new trends in anti-trust, private versus government anti-trust, securities regulation, environmental regulations, and a business firm's optimal response to regulation. Mr. Granfield, Mr. Osborne

463. Data Analysis and Management Decisions Under Uncertainty. Lecture, four hours. Prerequisite: Executive MBA Program. This course will survey statistical model-building, with emphasis on the managerial interpretation of the statistical summary of data. Classical statistics will be covered through multiple regression to support the courses in finance and marketing that follow. The fundamental approaches to decision-making under uncertainty will be presented. Mr. Hanssens, Mr. Buffa

464. Managerial Accounting. Lecture, four hours. Prerequisite: Executive MBA Program. This course 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. Lecture, four hours. Prerequisite: Executive MBA Program. A survey of modeling approaches to managerial planning and decisions. Emphasis is 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. (1 course, ½ course) Lecture, four hours. Prerequisite: Executive MBA Program. 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. This two-quarter course focuses on learning sound theoretical tools and on applying them in casework.
Mr. Copeland, Mr. Cornell

467. Management Information Systems. Lecture, four hours. Prerequisite: Executive MBA Program. Information Systems for management decision-making. Emphasis on support of the strategic planning and management control functions. Computer-based decision support systems. Organizational arrangements for performance measurement and control. Programming and budgeting systems. Information and motivation. Functional and dysfunctional effects.
Mr. Swanson, Mr. McDonough

468. Economic Forecasting. (½ course) Lecture, four hours. Prerequisite: Executive MBA Program. This course is concerned with macroeconomic theory and its application to business forecasting. It covers: 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. Kimball

469. Management of Human Resources. Lecture, four hours. Prerequisite: Executive MBA Program. This course provides an introduction to the major areas of human resource management — personnel management, labor economics, labor law, and labor relations. This will be 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. (½ course) Lecture, two hours. Prerequisite: Executive MBA Program. Course deals with action research methods including futures analysis, problem identification and problem solving, experimental design, survey methods and interview techniques in organizational setting. Mr. Mason

470B-470C-470D-470E. Action Research and Policy Analysis Project. (¼ course) Lecture, four hours. Prerequisite: Executive MBA Program. Four quarters of supervised study of an organization in relation to complex environmental changes. Development of an action research project and managerial policy scenarios. The drawing of organizational implications and recommendations for managerial and organizational response to deal with environmental change. Mr. Mason, Mr. Cornell

472. Marketing Strategy and Policy. Lecture, four hours. Prerequisite: Executive MBA Program. This course focuses on strategic marketing decisions including the development marketing objectives and strategies and the implementation of these strategies through pricing, channel, promotion and new product decisions. Mr. Weitz

473. Managerial and Organizational Processes. Lecture, four hours. Prerequisite: Executive MBA Program. The goal of this course is to assist each student in developing an understanding of the workings of large, complex organizations. The focus will be on the macroanalytic rather than on the microanalytic approach. Mr. Ouchi

474. Production and Operations Systems, Strategies and Policies. Lecture, four hours. Prerequisite: Executive MBA Program. 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. Buffa

475. International Managerial Policies and Strategies. Lecture, four hours. Prerequisite: Executive MBA Program. 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. Lecture, four hours. Prerequisite: Executive MBA Program. The study of the general management task of forging a corporate competitive strategy. Emphasis is 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. Lecture, four hours. Prerequisite: Executive MBA Program. While organizations may, to some extent, choose their immediate environments, there are broad environmental factors and trends that affect most, if not all, organizations. This course examines emerging trends in key areas of government regulation, labor relations, international trade, the basic economic structure, and social responsibility. Mr. Steiner, Mr. Osborne

478. Seminar on Action Research and Policy Position Papers. (½ course) Lecture, two hours. Prerequisite: Executive MBA Program. Course is a capstone experience to the action research project undertaken in Mgt. 470A-470E. Policy scenarios will be explored in a dialectical format similar to that used in congressional hearings. Based on their research projects, student teams will prepare position papers, arguments and compromise positions during the course of these faculty-led policy hearings. Mr. Mason, Mr. Cornell

Individual Study and Research Courses (numbered 500-599)

Individual study or research courses may be used, within limitations and conditions prescribed by the School, to satisfy minimum higher degree requirements.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate School of Management Graduate Adviser and Assistant Dean. Approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596A-596N. Research in Management. (¼ to 2 courses) Prerequisite: consent of Director of Master's Program or Director of Doctoral Program by special petition. Directed individual study or research.

597. Preparation for Qualifying Examinations. (1 or 2 courses) Prerequisite: consent of Director of Master's Program or Director of Doctoral Program by special petition. Preparation for comprehensive examination for the master's degree or the qualifying examination for the Ph.D. degree.

598. Thesis Research in Management. (1 or 2 courses) Prerequisite: consent of Director of Master's Program by special petition. Research for and preparation of the master's thesis.

599. Dissertation Research in Management. (1 or 2 courses) Prerequisite: consent of Director of Doctoral Program by special petition. Research for and preparation of the doctoral dissertation.

Mathematics

(Office, 6356 Mathematical Sciences Building)

Richard F. Arens, Ph.D., *Professor of Mathematics.*
Donald G. Babbitt, Ph.D., *Professor of Mathematics.*
Kirby A. Baker, Ph.D., *Professor of Mathematics.*
A.V. Balakrishnan, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
Robert J. Blattner, Ph.D., *Professor of Mathematics (Chair of the Department).*
Robert F. Brown, Ph.D., *Professor of Mathematics.*
Friedrich Busse, Ph.D., *Professor of Mathematics and Earth and Space Science.*
David G. Cantor, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
C. C. Chang, Ph.D., *Professor of Mathematics.*
[14]S.Y. Cheng, Ph.D., *Professor of Mathematics.*
Alonzo Church, Ph.D., *Professor of Mathematics and Philosophy in Residence.*
Earl A. Coddington, Ph.D., *Professor of Mathematics.*
Julian D. Cole, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
Philip C. Curtis, Jr., Ph.D., *Professor of Mathematics.*
Henry A. Dye, Ph.D., *Professor of Mathematics.*
Robert Edwards, Ph.D., *Professor of Mathematics.*
[6]Edward Effros, Ph.D., *Professor of Mathematics.*
[6]Björn Engquist, Ph.D., *Professor of Mathematics.*
Hector Fattorini, Ph.D., *Professor of Mathematics and Engineering and Applied Science.*
Thomas S. Ferguson, Ph.D., *Professor of Mathematics.*
Theodore Gamelin, Ph.D., *Professor of Mathematics.*
[7]John Garnett, Ph.D., *Professor of Mathematics.*
David Gieseker, Ph.D., *Professor of Mathematics.*
Basil Gordon, Ph.D., *Professor of Mathematics.*
John W. Green, Ph.D., *Professor of Mathematics.*
Robert E. Greene, Ph.D., *Professor of Mathematics (Vice Chair, Administrative).*
Nathaniel Grossman, Ph.D., *Professor of Mathematics.*
Alfred W. Hales, Ph.D., *Professor of Mathematics.*
Allen E. Hatcher, Ph.D., *Professor of Mathematics.*
Alfred Horn, Ph.D., *Professor of Mathematics.*
S. T. Hu, Ph.D., D.Sc., *Professor of Mathematics.*
Robert I. Jennrich, Ph.D., *Professor of Mathematics and Biomathematics and Public Health.*
Paul B. Johnson, Ph.D., *Professor of Mathematics.*
[14]Paul J. Koosis, Ph.D., *Professor of Mathematics.*
Thomas M. Liggett, Ph.D., *Professor of Mathematics.*
[6]D. Anthony Martin, *Professor of Mathematics.*
Ronald Miech, Ph.D., *Professor of Mathematics.*
John J. Millson, Ph.D., *Professor of Mathematics.*
Yiannis N. Moschovakis, Ph.D., *Professor of Mathematics.*
Barrett O'Neill, Ph.D., *Professor of Mathematics.*
Stanley J. Osher, Ph.D., *Professor of Mathematics.*
[14]Lowell J. Paige, Ph.D., *Professor of Mathematics.*
Sidney Port, Ph.D., *Professor of Mathematics.*
[6]James V. Ralston, Jr., Ph.D., *Professor of Mathematics.*
Raymond M. Redheffer, Ph.D., *Professor of Mathematics.*
Bruce L. Rothschild, Ph.D., *Professor of Mathematics (Vice Chair, Undergraduate).*
Leo Sario, Ph.D., *Professor of Mathematics.*
Murray Schacher, Ph.D., *Professor of Mathematics.*
Lloyd S. Shapley, Ph.D., *Professor of Mathematics and Economics.*
Robert Steinberg, Ph.D., *Professor of Mathematics.*
Ernst G. Straus, Ph.D., *Professor of Mathematics.*
Masamichi Takesaki, Ph.D., *Professor of Mathematics.*
[6]V. S. Varadarajan, Ph.D., *Professor of Mathematics.*
James White, Ph.D., *Professor of Mathematics.*
[6]N. Donald Yivisaker, Ph.D., *Professor of Mathematics.*
E. F. Beckenbach, Ph.D., *Emeritus Professor of Mathematics.*
M. R. Hestenes, Ph.D., *Emeritus Professor of Mathematics.*
Paul G. Hoel, Ph.D., *Emeritus Professor of Mathematics.*
William T. Puckett, Ph.D., *Emeritus Professor of Mathematics.*
Robert H. Sorgenfrey, Ph.D., *Emeritus Professor of Mathematics.*
Angus E. Taylor, Ph.D., *Emeritus Professor of Mathematics.*
Frederick A. Valentine, Ph.D., *Emeritus Professor of Mathematics.*
[6]S. Y. Alice Chang, Ph.D., *Associate Professor of Mathematics.*
Pamela Cook-Ioannidis, Ph.D., *Associate Professor of Mathematics.*
Rodolfo DeSapio, Ph.D., *Associate Professor of Mathematics.*
[7]Richard T. Durrett, Ph.D., *Associate Professor of Mathematics.*
Richard S. Elman, Ph.D., *Associate Professor of Mathematics.*
[8]David Gillman, Ph.D., *Associate Professor of Mathematics.*
[6]Mark Green, Ph.D., *Associate Professor of Mathematics.*
Charles G. Lange, Ph.D., *Associate Professor of Mathematics.*
John R. Steel, Ph.D., *Associate Professor of Mathematics.*
Kenneth P. Bube, Ph.D., *Assistant Professor of Mathematics.*
Daniel Michaelson, Ph.D., *Assistant Professor of Mathematics.*
H. David Yingst, Ph.D., *Assistant Professor of Mathematics.*

•

David Cohen, M.A., *Lecturer in Mathematics.*
Herbert Enderton, Ph.D., *Lecturer in Mathematics.*
John McGhee, M.A., *Lecturer in Mathematics.*

Admission Requirements. Prospective graduate students in mathematics need not have an undergraduate mathematics major, but they must 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, students must have earned in these upper division mathematics courses a cumulative grade point average of at least 3.2; for direct admission to the doctoral program, this grade point average must be at least 3.5.

Students who have already obtained a master's degree, must have maintained an average of better than 3.6 in their graduate study.

All applicants must take the Graduate Record Examination (GRE) Aptitude and Advanced Tests and they must submit at least two letters of recommendation from mathematicians who know their recent work.

A booklet *Graduate Studies in Mathematics At UCLA* with detailed information about the Department of Mathematics may be obtained by writing to the Graduate Adviser, Department of Mathematics, UCLA, Los Angeles, CA 90024.

Administration of Graduate Programs. Responsibility for all graduate mathematics programs rests with the departmental Vice Chair for Graduate Studies and a Graduate Studies Committee which makes policy, administers the Qualifying Examinations and hears appeals from students. On a day-to-day basis, the various programs are managed by the Vice Chair and the graduate administrative assistant from the Mathematics Graduate Office located in MS 6375.

Advising. The Vice Chair for Graduate Studies is the chief Graduate Adviser and heads a committee of faculty advisers whose fields of expertise span most of the major areas of mathematics.

All entering graduate students are required to meet with a graduate adviser who will help them plan a reasonable course of study.

The Graduate Vice Chair is responsible for monitoring the students' progress toward their degree objectives and approves all study lists, each quarter. Normally, a continuing student will be asked to meet with the Vice Chair (or some other adviser) at least once each year and a record of this interview will be placed in the student's file.

There are ample opportunities for students to meet with an adviser of their choice, throughout the academic year.

The Master of Arts Degree

Students may earn the M.A. degree under the Comprehensive Examination Plan, either in the basic *(pure mathematics)* program or under an interdisciplinary program in *applied mathematics.*

Foreign Language Requirement. There is no foreign language requirement for master's students.

Course Requirements. Eleven quarter 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 approval 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.

The Comprehensive Examination. For the basic (pure mathematics) M.A., the Comprehensive Examination consists of two written 4-hour tests, one in algebra and one in analysis. For students in the applied mathematics program, the Comprehensive Examination consists of a 4-hour written test in analysis and a similar test chosen from numerical analysis, methods of applied mathematics or probability/statistics. These tests are all prepared by a comprehensive examination committee appointed by the Graduate Vice Chair and they are offered twice each year, early in the Fall Quarter and towards the end of the Spring Quarter. Students may take one or both of their examinations at one sitting and they may retake their tests any number of times until they pass them.

Time to Degree. A well-prepared student should be able to complete the requirements for the M.A. degree in six quarters of full-time study.

500 Series Course Limitations. Students may enroll in Mathematics 596 (Directed Individual Study or Research) any number of times and they may count up to two courses in 596 towards their 11-course requirement for the M.A., provided they receive a B or better in these courses (not the grade S).

Disqualification and Appeal of Disqualification. Master's students who do not complete all the requirements for the M.A. degree within seven quarters of full-time study are liable to dismissal from the program. The Graduate Vice Chair decides in each particular case whether dismissal is warranted, but the student may appeal to the Graduate Studies Committee which has the ultimate say in these matters.

The Master of Arts in Teaching Degree

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 quarter courses are required, as follows.

The core courses. All candidates must take Mathematics 201ABC (Topics in Algebra and Analysis) and 202AB (Mathematical Models and Applications). Normally, all students also take one quarter of Mathematics 596 (Directed Study) while fulfilling the essay requirement described below.

Credential requirements. Candidates who plan to teach in secondary schools and who do not already have valid credentials for such teaching should enroll in the Single-Subject Credential program in the School of Education. Of the courses required by this program, students may receive M.A.T. degree credit only for the following courses: Education 100 (Cultural Foundations of Education), 112 (Psychological Foundations of Education), 312 (Basic Principles of Curriculum and Instruction) and 330AB (Supervised Teaching). Actual receipt of the credential is not a degree requirement. Each student affected should check with the Graduate School of Education for a full and up-to-date description of credential requirements, and should submit a 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 will be sufficient for the candidate to have the M.A.T. degree, as described below (additional courses).

In exceptional cases, an M.A.T. program may be individually designed for students who are candidates for a credential other than the two already mentioned.

Additional courses. Besides the six core courses described above, all candidates must take a seventh upper division or graduate course in Mathematics. Particularly recommended are Mathematics 106, 110BC, 111AB, 130A, 131B, 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.

Candidates may not receive degree credit for Mathematics 370 or for any Mathematics course numbered 100-109 except 106 (History of Mathematics). In addition, by Departmental and University rules, candidates may not receive degree credit for more than two quarters of Mathematics 596 or for more than two quarters of any 300 series courses.

Essay requirement. Each candidate must prepare a master's essay. This is an expository account of some subject in mathematics of interest to the student and related to his or her prospective teaching. In practice, the student ordinarily writes 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 a student working for a secondary credential must take the supervised teaching course. M.A.T. students are eligible for teaching assistantships.

The Comprehensive Examination. In the M.A.T. program, students take one examination in mathematical subject matter and one in content and philosophy of secondary school mathematics. Ordinarily, these are administered in conjunction with courses 201ABC and 202AB. Reexamination after failure is allowed.

Time to Degree. A well-prepared student should be able to complete the requirements for the M.A.T. degree in six quarters of full-time study.

Disqualification and Appeal of Disqualification. There are no conditions that lead to dismissal from the program, other than failure to satisfy the University requirement of a 3.0 or better grade point average.

The 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 students are urged to read the booklet *Graduate Studies In Mathematics At UCLA* where the specialities of the faculty and the active research areas in the Department are described in some detail.

Foreign Language Requirement. Students are required to pass two written departmental language examinations in French, German or Russian, except that with the approval of the Graduate Vice Chair, students in the applied program may substitute a computer language project for one of the languages. Foreign students whose principal language of instruction in their elementary and secondary education was not English, may substitute English for one of the foreign languages, but then their other language must be one of French, German or Russian (even if they are in the applied program).

These examinations are offered twice each year, in the Fall and Spring, and they require the student to translate material in some basic field of mathematics without the use of a dictionary. They may be retaken any number of times until passed. At least one of the language examinations must be passed before the student can take the first Oral Qualifying Examination and the complete language requirement must be satisfied before the student takes the Final Oral Examination.

Course Requirements. In the pure mathematics program, students must pass satisfactorily (with a grade of A or B) at least 12 mathematics courses numbered from 205 to 285 but excluding the basic courses 210AB, 245AB and 246AB. At most, three of these courses may be numbered 285.

In the applied mathematics program, students must pass satisfactorily (with a grade of A or B) at least 18 approved graduate courses including at least 12 mathematics courses numbered from 205 to 285. At most, three of these may be numbered 285.

Students in the pure program are also required to satisfy a *seminar participation requirement* by lecturing at least twice in each of two seminars directed by a faculty member, within one year after passing the Written Qualifying Examinations.

Written and Oral Qualifying Examinations. In the pure mathematics program, a student is 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 twice each year, in the Fall and Spring Quarters. A student 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 for graduate study.

In the applied mathematics program, a student must pass four Qualifying Examinations. The first three Qualifying Examinations are a written examination in applied real and complex analysis, and two written examinations chosen from the three areas, applied differential equations, numerical analysis, and probability-statistics. Two of these three examinations are to be completed by the end of six registered quarters after being admitted to graduate study. The third examination is to be completed by the end of nine registered quarters. These examinations are given twice a year, in the Fall and Spring Quarters. The fourth Qualifying Examination, either written or oral, is in the student's specialized "outside" field, testing the student's competence at a research level. The student must present for the approval of the Applied Mathematics Committee, a program describing his or her intended preparation in the specialized outside field. Candidates for the Ph.D. in the applied mathematics program may substitute for the first two Qualifying Examinations the two Qualifying Examinations in real analysis and in complex analysis given regularly in the pure mathematics Ph.D. program.

After passing the four Qualifying Examinations, the student is eligible to set up the doctoral committee which administers the Oral Qualifying Examination for advancement to candidacy. The main purpose of this examination is to test the candidate's depth of knowledge in his or her chosen specialty, although a discussion of the candidate's plans for the dissertation is not ruled out. Reexamination after failure on the first Oral Qualifying Examination is determined on an individual basis. A more detailed description of the written examinations for both programs can be found in the booklet *Graduate Studies in Mathematics at UCLA*.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination may be waived by the candidate's doctoral committee, with the approval of the Graduate Vice Chair.

Time to Degree. A well-prepared student should be able to pass the Written Qualifying Examinations for the Ph.D. degree within seven quarters of full-time work. Completion of all degree requirements (including the dissertation) normally takes 15 quarters.

Candidate in Philosophy Degree. A student is eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D. degree.

Disqualification. Failure to pass all the Written Qualifying Examinations within nine quarters of attendance or failure to pass two such examinations within six quarters make a student liable to dismissal from the Ph.D. program.

Appeals. The student is informed by the Graduate Vice Chair and is asked to submit a written appeal and to solicit letters of support from members of the faculty. This appeal is considered by the Graduate Studies Committee which decides by vote whether the student will be allowed to remain in the program. The decision of the Graduate Studies Committee is final.

Graduate Courses

Teacher Preparation

201A-201B-201C. Topics in Algebra and Analysis. Prerequisite: B.A. degree with mathematics major or equivalent. A course for students in the mathematics-education program. Students may not receive credit toward the M.A. degree in Mathematics for this course. 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.

202A-202B. Mathematical Models and Applications. Prerequisite: B.A. degree with mathematics major or equivalent. A course designed for students in the mathematics-education program. Students may not receive credit toward the M.A. degree in Mathematics for this course. A development of mathematical theories describing various empirical situations. Basic characterizing postulates are discussed and a logical structure of theorems developed. Modern topics such as operations research, linear programming, game theory, learning models, models in social and life sciences.

Number Theory

205A-205B-205C. Number Theory. Prerequisites: courses 246A and 210A or consent of instructor. Topics from analytic algebraic and geometric number theory, including distribution of primes and factorization in algebraic number fields. Also 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 may not receive credit toward the Master's degree for both 210B and 110B and/or 210C and 110C. Group theory including the theorems of Sylow and Jordan-Holder-Schreier; rings and ideals, factorization theory in integral domains, modules over principle 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 chosen from 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 chosen from 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. Prerequisites: course 210A and some knowledge of topology, or consent of instructor. Partially ordered sets, lattices, distributivity, modularity, completeness, ideal theory, representation theory. Interaction with algebra, combinatorics, topology, and logic.

223A. Model Theory. Prerequisites: courses 220A-220B-220C. Topics will be chosen from 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 will be chosen from constructibility theory, Cohen extensions, large cardinals, and combinatorial set theory.

223C. Recursion Theory. Prerequisites: courses 220A-220B-220C. Topics will be chosen from 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. Prerequisites: knowledge of basic theory of topological groups and knowledge of 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. [illegible] of simple Lie algebras. Representa[illegible] groups. Weyl's character formula.

Topology

230. General Topology. Prerequisite: courses 131A-131B or consent of instructor. Students may not receive credit toward the Master's degree for both 230 and 121. 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 131A-131B and 121 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-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. Prerequisite: courses 231A, 231B or consent of instructor. Handlebody theory, transversality; PL topology; surgery; topic varies 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; topic varies from year to year.

Analysis and Differential Equations

240. Methods of Set Theory. Prerequisites: courses 131A-131B, 110A-110B, (also course 121 or its equivalent). Naive, axiomatic set theory, the axiom of choice and its equivalents, wellorderings, 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 131A-131B and course 121 or equivalent (e.g. 230 can be taken concurrently). Students cannot receive credit toward the Master's degree for both 245A and 134. 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 may not receive credit toward the Master's degree for both 246A and 132. 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 Reimann surfaces. Infinite products. Partial fractions. The classical transcendental functions. Elliptic functions.

247A-247B. Classical Fourier Analysis. Prerequisites: course 245 and one quarter of course 246. 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 n-th order equations. Analytic systems with isolated singularities. Self-adjoint boundary value problems on finite intervals.

250B. Nonlinear Ordinary Differential Equations. Prerequisite: course 250A. Asymptotic behavior of nonlinear systems. Stability. Existence of periodic solutions. Perturbation theory of two-dimensional real autonomous systems. The Poincaré-Bendixson theory.

250C. Advanced Topics in Ordinary Differential Equations. Prerequisites: course 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 courses 246A-246B-246C, or consent of instructor. Introduction to analytic functions of several complex variables. The problem, Cousin problems, domains of holomorphy, complex manifolds.

254A-254B. Trigonometrical Series. Prerequisite: course 246A or 245A, taken previously or concurrently; 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 246A, 245A-245B; or 246A, 265A-265B; 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 chosen from 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. Prerequisite: course 255 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. Prerequisites: course 246 and courses 255A and 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. This course represents a continuation of course 142. It is concerned with the construction, analysis and interpretation of mathematical models of problems which arise outside of mathematics.

M263. Hydrodynamic Instabilities and Turbulence. (Same as Earth and Space Sciences M211.) An introduction to the theories of hydrodynamic instability and the non-statistical 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.

264. Applied Complex Analysis. Prerequisite: course 246A or consent of instructor. Topics chosen from 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. Prerequisite: course 131A-131B or consent of instructor. This course is not open for credit to students with credit in 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 courses 132, 145A-145B. 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. Prerequisites: 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 magneto-hydrodynamics.

267A-267B. Applied Algebra. Prerequisite: course 110A or equivalent. Students may not receive credit toward the master's degree for 267A and 210A. 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 115, 135A, 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-270B. Mathematical Aspects of Scientific Computing. Prerequisites: course 115, 140A or consent of instructor. May be repeated for credit by petition. The course will vary from year to year between computational linear algebra and computational fluid dynamics. Computational linear algebra: direct, fast, and iterative algorithms, overdetermined systems; singular value decomposition, regularization, sparse systems, the algebraic eigenvalue problem. 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 and some 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 and some 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 and 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 and Perturbation Methods I. (Same as Mechanics and Structures M292A.) Prerequisites: Course 192A or equivalent; 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.

M274B. Asymptotic and Perturbation Methods II. (Same as Mechanics and Structures M292B.) Prerequisites: Engineering 192A or equivalent; Mathematics 132 or equivalent. The fundamental mathematics of asymptotic analysis, limit process expansions, regular and singular perturbation problems, matching of asymptotic expansions, multiple scale methods, application to partial differential equations, near and far fields.

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 and the course may be repeated for credit.

276A-276B. Mathematical Statistics. Prerequisites: courses 150A-150B-150C or 152A-152B and courses 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. Nonparametric and robust procedures are developed 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.) Prerequisites: Mathematics 150C or 152B and 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.) Prerequisites: Mathematics 115 and 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.

285. Seminars. Prerequisite: consent of instructor. No more than two 285 courses can be applied toward the Master's degree course requirement, except by prior permission of the Vice-Chairman for Graduate Studies. Topics in various branches of mathematics and their applications by means of lecturers 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. Prerequisite: consent of instructor. Seminars and discussion by staff and students. No course credit will be given, but these may be used to satisfy the participating seminar requirement for the Ph.D.

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. A seminar for Ph.D. candidates. Readings and presentations of papers in mathematical literature under the supervision of a staff member.

Professional Courses in Method

370. The Teaching of Mathematics. Prerequisites: course 31B, 3B, or 4B and Senior Standing. A critical inquiry into present-day tendencies in the teaching of mathematics.

371AB. Analysis of Mathematics Teaching/Learning. Prerequisite: two years or more teaching mathematics at elementary or secondary level. Aspects of mathematical information processing in relation to the teaching and learning of mathematics. Analysis of typical learning units in terms of these aspects. Implications of this analysis for teaching strategies, curriculum design, testing, and the incorporation of calculators and computers. Mr. Cabellero

Individual Study and Research

596. Directed Individual Study or Research. (½ to 1 course) Supervised individual reading and study on a project approved by a faculty member, which may be preparation for the master's essay. May be repeated for credit, but only two such courses may be applied toward the master's degree unless departmental approval is obtained.

599. Research in Mathematics. (½ to 2 courses) Study and research for the Ph.D. dissertation. May be repeated for credit.

Medical History

See Department of Anatomy.

The School of Medicine

The accelerated emergence of Los Angeles as one of the nations's major metropolitan centers led The Regents of the University of California on October 19, 1945, to authorize the University's second medical school, the first in Southern California, at UCLA.

The School of Medicine operates on a quarter system with a 4-year curriculum. The freshman year consists of three quarters of courses in basic medical sciences, social medicine and behavioral sciences, followed by a summer quarter of vacation. The sophomore year, also three quarters, includes further study in basic medical sciences, clinical fundamentals, and pathophysiology of disease. The junior and senior years are a continuum of education of 94 weeks total; 50 weeks of required clinical clerkships, 28 weeks of electives which stress the scientific basis of disease of specific organ systems, and 16 weeks of vacation; advanced clinical clerkships in primary medicine. Schedule choices are submitted by students and a computer system is employed to arrange programs as equitably as possible.

Special programs of study for individual students may be arranged within the framework of the medical school curriculum. Normally, these programs are available only after the student has completed the first year and with approval of the Dean's Office and the chair of the department responsible for the additional coursework. Every effort is made to maintain flexibility within the medical school curriculum, although extensive changes in the course of study can be arranged for only a limited number of students.

Admission Requirements

The School of Medicine on the Los Angeles campus admits 144 freshman students each fall. Applications, cards and medical school catalogs for the class entering September 1982 are available from the Office of Student Affairs, UCLA School of Medicine, Los Angeles, CA 90024 from June 1 to October 15, 1981. Applications are available from the American Medical College Application Service (AMCAS). The $30 fee charged by AMCAS for application to any three participating medical schools covers UCLA's initial screening of applications. If an applicant is granted an interview, a non-refundable fee of $20 is required.

Ordinarily a baccalaureate degree is required for admission. However, in certain instances, outstanding students who have completed three full academic years at an accredited college or university are accepted. College years should be devoted to obtaining as broad an education as possible. The major objectives should be the following: (1) competence in English, written and spoken; (2) capacity for quantitative thinking represented by mastery of mathematics; (3) such training in physical and biological science as will facilitate comprehension of medical science and the scientific method; and (4) insight into human behavior, thought and aspiration from study in the social sciences and humanities.

These objectives will ordinarily require completion of the following studies:

Required Courses

English. One year of college English to include the study of English composition.

Physics. One year of college physics (with lab).

Chemistry. Two years of college chemistry to include the study of inorganic chemistry, quantitative analysis and organic chemistry.

Biology. Two years of college biology to include the study of cellular, molecular, developmental and genetic biology. This will include at least one year of upper division courses.

Mathematics. One year of college mathematics to include the study of college algebra. In addition, the study of introductory calculus is also highly recommended.

Courses (e.g., human anatomy) which overlap in subject matter with those in the School of Medicine are not advised. However, advanced or specialized courses in biological science (e.g., cellular physiology) are desirable.

The premedical requirements must be completed before beginning the first year of medical studies, although these requirements need not be completed at the time the application for admission is filed. Accepted candidates must pass a physical examination before registering. Candidates will be selected on the basis of the following considerations:

1. Undergraduate and, where applicable, graduate academic achievement.

2. Score on the Medical College Admission Test, which is administered for the Association of American Medical Colleges by the Psychological Corporation.

3. Interview by a member or members of the Admissions Committee.

4. Evaluation of the applicant's accomplishments and character in letters of recommendation.

The Committee on Admissions selects candidates who present the best evidence of broad training and strong achievements in college, a capacity for mature interpersonal relations, and the traits of personality and character conducive to success in medicine. Preference is not given to students who major in natural sciences, since study in the social sciences and humanities is considered equally valuable.

Advanced Training. Transfer students are accepted into the junior year only. Transfer applications may be submitted November 1 — February 1 to the Office of Student Affairs, Room 13-144 of the Center for Health Sciences.

Graduate Work

Graduate work leading to the M.S. and/or Ph.D. degree is offered, either separately or in conjunction with the M.D. program in the following fields: Anatomy, Biological Chemistry, Biomathematics, Medical Physics (Department of Radiological Sciences), Microbiology and Immunology, Neuroscience, Pathology, Pharmacology, and Physiology. Students enrolled in the Graduate Division who have completed courses in the School of Medicine must apply to the first year class in order to be considered by the Admissions Committee. The requirements for academic degrees offered through the Graduate Division by departments in the School of Medicine are described under the departmental heading listed in this section. For details concerning the medical curriculum, please consult the *UCLA Announcement of the School of Medicine.*

Microbiology

(Office, 5304 Life Sciences Building)

R. John Collier, Ph.D., *Professor of Microbiology.*
Frederick A. Eiserling, Ph.D., *Professor of Microbiology (Chair of the Department).*
C. Fred Fox, Ph.D., *Professor of Molecular Biology in Microbiology.*
June Lascelles, Ph.D., *Professor of Microbiology.*
Rafael J. Martinez, Ph.D., *Professor of Microbiology.*
Donald P. Nierlich, Ph.D., *Professor of Microbiology.*
M.J. Pickett, Ph.D., *Professor of Microbiology.*
Sydney C. Rittenberg, Ph.D., *Professor of Microbiology.*
William R. Romig, Ph.D., *Professor of Bacteriology.*
Eli E. Sercarz, Ph.D., *Professor of Microbiology.*
Gary L. Wilcox, Ph.D., *Professor of Microbiology.*
[4]John H. Silliker, Ph.D., *Adjunct Professor of Microbiology.*
[18]Jack G. Stevens, D.V.M., Ph.D., *Professor of Virology.*
Meridian Ruth Ball, Sc.D., *Emeritus Professor of Bacteriology.*
Gregory J. Jann, Ph.D., *Emeritus Professor of Bacteriology.*
David R. Krieg, Ph.D., *Emeritus Professor of Bacteriology.*
Anthony J. Salle, Ph.D., *Emeritus Professor of Bacteriology.*
Bernadine Wisnieski, Ph.D., *Associate Professor of Microbiology.*
Arnold J. Berk, M.D., *Assistant Professor of Microbiology.*
Robert P. Gunsalus, Ph.D., *Assistant Professor of Microbiology.*
Owen N. Witte, M.D., *Assistant Professor of Microbiology.*

Laurel G. Heffernan, Ph.D., *Adjunct Assistant Professor.*
Donald A. Kaplan, Ph.D., *Associate Research Microbiologist.*
Aldons J. Lusis, Ph.D., *Assistant Professor of Medicine In-Residence.*
Mary Ann K. Markwell, Ph.D., *Assistant Research Microbiologist.*
Alexander Miller, Ph.D., *Research Microbiologist.*

M.A. and Ph.D. Programs General Information

Advising. Frederick A. Eiserling, Graduate Adviser, Department of Microbiology, 5304 Life Science, 825-3578.

The goal of the advanced degree program is to prepare students for creative research careers in microbiology, including bacteriology, virology, immunology, and cell biology.

Each student is initially placed under the tutelage of a committee of three faculty members appointed by the Graduate Adviser, who are responsible for evaluating progress during the first year and for designing individual study programs for each quarter. The Graduate Student Association of the Department also appoints a member to the guidance committee. Informal records are kept of these committee meetings. The committee serves in this advisory capacity until the student has chosen a professor as research adviser. The Graduate Adviser is an *ex officio* member of the advisory committee. Changes in the membership of the committee may be made with the mutual agreement of the student, Graduate Adviser and committee members.

Preparedness for proceeding beyond the first year is determined by a year-end evaluation of the student's overall performance in 1) coursework, 2) teaching assistantships, 3) individual research projects, 4) seminars, 5) written examination. The written examination shall consist of a short proposal (five pages) on a current topic drawn from a seminar presentation given by the student or drawn from one of the faculty seminars and approved by the Graduate Adviser. The faculty will yearly, at the opening of the Fall Quarter, review students' progress in the above requirements. Progress into the second year requires faculty approval.

Major Fields or Subdisciplines. Areas of faculty expertise:

A.J. Berk — Gene Expression in Eucaryotic Cells; Processing of mRNA, Animal Viruses

R.J. Collier — Biochemistry of Bacterial Toxins

F.A. Eiserling — Microbial Ultrastructure Cyanobacteria; Bacteriophage Morphogenesis

C.F. Fox — Structure and Function of Biological Membranes

R. P. Gunsalus — Molecular Biology of Microbial Growth

J. Lascelles-Microbial Biochemistry and Physiology

R.J. Martinez — Biochemistry of Host-Parasite Relations

D.P. Nierlich — Nucleic Acid Synthesis and Regulation of Growth

M.J. Pickett — Medical Microbiology

S.C. Rittenberg-Microbial Physiology; Bdellovibrio; Chemolithotrophy

W.R. Romig — Microbial Genetics; Bacteriophage

E.E. Sercarz — Molecular and Cellular Immunology

J.G. Stevens — Animal Virology; Experimental Pathology

G.L. Wilcox — Genetic Regulatory Mechanisms

B.J. Wisnieski — Membrane Biology

O.N. Witte — Oncorna Viruses/Immunology

Disqualification. The only clear case for a recommendation for termination of graduate study is repeated academic failure during the first four quarters in course requirements, examinations and maintenance of required progress toward the degree.

Appeals. The decision to terminate students is rare, and appeal to the Department Chair is available.

The Master of Arts Degree

Admission Requirements. Requirements for admission are the same as for the Ph.D. degree. Information is available from the Graduate Adviser's office.

The Department accepts relatively few students whose objective is a master's degree *per se*, and applicants should contact a potential faculty sponsor at the time of application.

The Ph.D. Degree

Admission Requirements. For admission, the student must have completed an undergraduate major in science, with superior scholastic achievement. Applicants should have preparation in calculus, physics, biology, genetics, organic and biological chemistry and microbiology. Physical chemistry is strongly recommended. A student may be admitted with background deficiencies to be remedied prior to or concurrent with graduate studies. Applicants should submit directly to the Department, scores of the GRE Aptitude examination. Evidence (via letters of recommendation, interviews or direct knowledge) of the applicant's research potential and motivation is also required.

Completion of a master's degree is not normally required. A written examination is required for advancement to candidacy, as described below under *Written and Oral Qualifying Examinations.*

Course Requirements

1. Formal lecture/lab courses

a. *Biochemistry:* Two are required: the 6-unit lecture course, Chemistry/Biological Chemistry M253, "Proteins and Nucleic Acids." This course is taught only in the Fall Quarter, and it is advisable to complete it during the first year.

The second course is Microbiology 225 or Microbiology 239, 8 units each, combination laboratory and lecture course, taught in the Winter and Spring Quarters, respectively. The course is designed to acquaint students with some fundamental techniques they are likely to encounter in research. This course should also be taken during a student's first year.

b. *Genetics and Regulation:* One 200 level, 4-unit course is required. Courses which may be used to satisfy this requirement are Microbiology 203-Advanced Microbial Genetics, or Biology 221-Genetic Analysis.

c, d, e. A total of 8 additional units of 200 level coursework to be selected from at least two of the three subject areas is required. At least two areas are required. Acceptable courses in the three subject areas are:

f. *General Microbiology and Cell Biology*

Microbiology 230A — Structural Molecular Biology
Microbiology M226 — Chromosome Structure and Regulation
Biology 227 — Chromosome Structure and Replication
Biology 229 — Structural Macromolecules
Biology 238 — Structure, Functions, and Biogenesis of Mitochondrion
Microbiology M293 — Survey of Oncology

g. *Host-Parasite Interactions and Virology*

Microbiology & Immunology 201 — Microbiology and Immunology
Microbiology & Immunology 208 — Animal Virology
Microbiology & Immunology 210 — Medical Mycology
Pathology 242 A,B,C — Molecular Mechanisms in Disease

h. *Immunology*

Microbiology M185 — Immunology
Microbiology M258A, B, C — Advanced Immunology
Microbiology & Immunology M212 — Laboratory Procedures in Immunological Research
Microbiology & Immunology 261 — Tumor Immunology
Microbiology & Immunology 264 — Molecular Immunology

Other courses may be accepted with written permission of the departmental Graduate Adviser and the student's advisory committee.

Students are expected to complete two courses in physical chemistry, namely Chemistry 110A (Thermodynamics) and 156 (Physical Biochemistry). This requirement can be waived on the basis of work done before entering UCLA. If a student must take both courses as a graduate student, it is permissible to apply one of them (4 units) towards satisfaction of the unit requirement under 2. below.

2. *Student participation seminar courses:* Each quarter literature review groups or other

seminar courses in which students read and report on current scientific research literature are organized. These 2-unit courses meet weekly for an hour or longer. Students must enroll in five such courses (including two offerings in the 204 series) during their first two years of residence (10 units).

3. *Laboratories (introduction to research):* During the first 15 months of residence, a student rotates for one quarter each through three laboratories within the Department (outside laboratories are permissible with the consent of the advisory committee). This is to acquaint the student with research ongoing within the Department and to permit the student to perform research projects in the various laboratories. The student will normally enroll in Microbiology 596 for four units of credit for each laboratory. A short written report of work completed must be filed in the departmental office before a grade will be submitted to the Registrar.

Teaching Requirement. 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.

First Year Proposal

By June 30 of the first year of study the student will submit an original research proposal of approximately five pages. The topic may be based on a subject presented in a departmental professional seminar or material from one of the seminar courses. The suggestions and evaluations of the faculty committee concerning the proposal will be returned to the student and used by faculty as part of the basis for evaluation for continuation into the second year.

Written and Oral Qualifying Examination. This examination must be taken within 21 months of entry into graduate school and must be passed, if reexamination is required, no later than 24 months from the date of entry. (These periods may be extended to 26 and 29 months respectively with the written approval of the departmental Graduate Adviser and the student's mentor.)

The examination is administered by the doctoral committee which will normally serve as the thesis committee as well. The examination tests for depth of knowledge as would be expected from the graduate studies undertaken. As a major part of the examination, the student prepares and defends a written research proposition. The student is expected to read in detail in the area of the proposition and then suggest a defined experimental approach and an interpretation of results that may be obtained. A well-written account of the proposal not to exceed 15 to 20 pages with bibliography must be given to the committee at least two weeks before the examination. Before presentation to the doctoral committee, the student is encouraged to present the proposition before a student seminar group. Members of the doctoral committee should ordinarily not be present at this seminar.

An oral examination will cover both the student's proposition and general scientific background. It is not restricted to the topics of the proposition. The committee may arrange alternate ways to assess the candidate's preparation and qualifications.

Final Oral Examinationn Following Completion of the Dissertation. A dissertation on a subject chosen by the student in consultation with the major professor is required of every candidate for the degree. The research must make an independent, worthwhile contribution to scientific knowledge acceptable for publication in a major scientific journal.

This required examination is a defense of the completed dissertation, presented as a professional seminar and open in part to the public administered by the doctoral committee. The student should attempt to relate the findings to the field as a whole, and adequately summarize and project future experimental possibilities. The presentation will be followed by a closed discussion with the doctoral committee.

Time to Degree. Laboratory rotations, approval of progress by the student's advisory committee, and choice of faculty adviser should be completed by the end of the fourth quarter.

Coursework should be completed by the end of the sixth quarter. The written proposition and oral examination should be completed by the end of the sixth quarter.

The dissertation and the Final Oral Examination should be completed during the fourth and no later than the fifth year of study (15 quarters).

*Graduate Courses

203. Advanced Microbial Genetics. (¾ course) Lecture and discussion, three hours. Prerequisites: course 101; M132; Chemistry 152 or equivalent; undergraduate seniors may enroll with consent of instructor. Discussion of genetic and biochemical principles and techniques used in the construction of bacterial strains. Topics discussed will include transduction, conjugation, transformation, restriction endonucleases, and DNA cloning. Mr. Wilcox (Sp)

C204A. Molecular Biology of Bacterial Growth. (½ course) Lecture, three hours; discussion, one hour. Prerequisites: Biology 8, Chemistry 24, Microbiology 101 or equivalents; or consent of instructor. Intended primarily for graduate students, this course includes an additional discussion of the research literature and methodology. May be concurrently scheduled with course C104A. First five weeks in Spring Quarter. Grade or S/U. Mr. Nierlich

C204B. Biochemical Genetics of Eucaryotic Cells. Lecture, three hours; discussion, one hour. Prerequisites: Some background in microbiology, biochemistry and genetics and consent of instructor. Intended primarily for graduate students, this course includes an additional discussion of the research literature and methodology. May be concurrently scheduled with course C104B. Five weeks in Fall Quarter. Grade or S/U. Mr. Lusis

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

C204C. The Mammalian Cell as a Microorganism. (½ course) Lecture, three hours. Prerequisites: Chem 152 and consent of instructor. The cultured mammalian cell as an experimental system for the study of normal regulatory processes and disease mechanisms. Course contents includes 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. Five weeks in Fall quarter. Graduate student offering includes an additional discussion of the research literature and methodology in addition to sessions meeting with course C104C. Mr. Fox

C204D. Protein Metabolism. (½ course) Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 152 and consent of instructor. Intended primarily for graduate students, this course includes further discussion of the literature and experimental methods. May be concurrently scheduled with course C104D. Five weeks in Spring Quarter. Grade S/U. Mr. Collier

C204E. RNA Tumor Viruses. (½ course) (Same as Micro 104E) Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 152 and consent of instructor. Intended primarily for graduate students, this course includes an additional discussion of the research literature and methodology. May be concurrently scheduled with course C104E. Five weeks in Spring Quarter. Grade or S/U. Mr. Witte

M212. Laboratory Procedures in Immunological Research. (½ course) (Same as Immunology M212.) Prerequisites: course M185 or equivalent and consent of instructor. A series of 12 intensive laboratory workshops designed to acquaint the student with the advanced methodologies utilized for immunological research. Workshops will be offered at regular intervals and will have a duration of 2-3 days. Successful completion of four workshops constitutes the requirements for one course. Enrollment will be limited to 25. May be repeated for credit if different projects are undertaken. Grade S/U. Students must enroll through Microbiology and Immunology. Mr. Ashman, Mr. Bonavida, Mr. Stevens

214. Methods in Membrane Biology. Lecture and 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. Offered alternate years, beginning Winter Quarter 1978. Ms. Wisnieski (W)

221U-221Z. Seminars and Symposia on Molecular Biology. (½ to 1 course 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 registering for one of these seminars will receive an abstract booklet for the symposium and will use the abstracts as the starting point for weekly presentations on the topics to be treated at the symposium. The student will in this way 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)

225. Biochemical Methods in Microbial and Cell Biology. (2 courses) Lecture and discussion, three hours; laboratory, twelve hours. Prerequisite: consent of instructor. Emphasis will be on techniques for purification and characterization of proteins, including cell disruption, column chromatography, gel electrophoresis, ultracentrifugation, various optical methods, and use of radioisotopes. Mr. Collier, Mr. Wilcox (W)

M226. Chromosome Structure and Regulation. (Same as Biological Chemistry M226, Biology M226, Chemistry M226, and Microbiology and Immunology M226.) Lecture, three hours. Prerequisite: consent of instructor. Lectures and panel discussions on the structural and functional organization of eucaryotic chromosomes. S/U grades are used for this course. Mr. Martinson, Mr. Tobin, Mr. Wall

M230A. Structural Molecular Biology. (½ course) (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 (F)

M230B. Structural Molecular Biology. (½ course) (Same as Biology M230B and Chemistry M230B.) Lecture, two hours; discussion, one hour. Prerequisites: Physics 6C, Mathematics 3C and consent of instructor. Selected topics from the following: 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. Mr. Eiserling (W)

M230C. Structural Molecular Biology Laboratory. (½ course) (Same as Biology M230C and Chemistry M230C.) Laboratory, ten hours. Prerequisite: consent of instructor, based on a written research proposal. Laboratory: 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 (F)

M230D. Structural Molecular Biology Laboratory. (½ course) (Same as Biology M230D and Chemistry M230D.) Laboratory, ten hours. Prerequisite: course M230B concurrent. Methods in structural molecular biology, including experiments utilizing the following procedures: 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 (W)

M239. Laboratory Techniques in Nucleic Acid Research. (2 courses) (Same as Biology M239.) Lecture, two hours; discussion, one hour; laboratory, twelve hours (open lab). Prerequisite: consent of instructor. Procedures in the manipulation of nucleic acids, including: isolation of DNA and RNA and physical and chemical characterization by several means; characterization of circular DNA molecules by electron microscopy, gradient centrifugation and restriction enzyme analysis; in vitro transcription and hybridization analysis. Mr. Nierlich, Mr. Simpson (Sp)

250. Seminar in Microbial Metabolism. (½ course) Ms. Lascelles, Mr. Rittenberg

251. Seminar in Regulation and Differentiation. (½ course) Graded S/U only. Mr. Nierlich, Mr. Wilcox

252. Seminar in Medical Microbiology. (½ course) Mr. Pickett

253. Seminar in Biochemistry of Host Defense Mechanisms. (½ course) Lecture and discussion, one hour. Prerequisite: consent of instructor. Discussion of the literature dealing with host defense mechanisms. The biochemical mechanisms of action of host defense will be stressed. May be taken for letter grade or S/U. Mr. Collier, Mr. Martinez

255. Seminar in Bacterial Viruses. (½ course)

256. Seminar in Microbial Genetics. (½ course) Mr. Eiserling, Mr. Romig

M257. Seminar in Host-Parasite Relationships. (½ course) (Same as Microbiology and Immunology M257.) Prerequisite: consent of instructor. In this course recent advances in our knowledge of host-parasite interactions and means of controlling the parasites are discussed. Mr. Miller, Mr. Pickett

M258A. Advanced Immunology. (½ course) (Same as Biology M250A and Microbology and Immunology M258A; formerly numbered M258.) Lecture, three hours; discussion, one hour. Prerequisite: the equivalent of Microbology M185 or Microbiology and Immunology 202 or consent of instructor. This two-term lecture discussion course is designed to provide continuity between the basic immunology courses and the original research literature. The major aspects of the immune system will be intensively examined with emphasis on fundamental principles and on advances of the past five years. The first term will consist of lectures dealing with the development of B and T lymphocytes and the interaction of these two lymphocyte subpopulations in the production of immunoglobulin. In addition to the lectures there will be five discussion sessions for those enrolled in the course. To be offered in the Fall Quarter of each academic year. Grade or S/U. Mr. Fahey, Mr. Stevens (F)

M258B. Advanced Immunology. (½ course) (Same as Biology 250B and Immunology M258B.) Prerequisites: the equivalent of Microbology M185 or Microbology and Immunology 202 and M258A or consent of instructor. A continuation of M258A which will consider the details of antibody structure, T lymphocyte function and selected topics of broad immunological significance. To be offered in the Winter Quarter of each academic year. Mr. Clark (W)

M260. Immunology Forum. (½ course) (Same as Microbiology and Immunology M260.) Lecture, two hours. Prerequisite: Microbiology M185. A broad range of current topics in immunology will be presented and discussed at an advanced frontier level. This is a continuing UCLA-wide, general graduate-level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments.

M263. Cellular Immunology Seminar. (½ course) (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

M264-M264B-M264C. Molecular Basis of Atherosclerosis: Selected Topics. (½ course) (Same as Biological Chemistry M264A-M264B-M264C and Chemistry M264A-M264B-M264C.) Lecture, two hours. Prerequisites: course M261 or equivalent with consent of instructor. These courses will cover a variety of topics concerning the biochemistry, morphology and physiology of atherosclerosis. Emphasis will be placed on the chemistry of lipoproteins and the role of plasma lipoproteins on the regulation of tissue lipid metabolism and the development of atherosclerosis. The courses are not consecutive and may be taken in any order.

M293. Major Concepts in Oncology. Lecture, three hours. Prerequisite: Graduate Standing or consent of instructor. Course designed for graduate students contemplating research in oncology. Lecture. 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.

M298. Seminar in Current Topics in Molecular Biology. (½ course) (Same as Biological Chemistry M298, Biology M298, Chemistry M298, Microbiology and Immunology M298 and Molecular Biology M298.) Prerequisites: enrollment must be approved by the instructor and by the Graduate Adviser of the Interdepartmental Molecular Biology Ph.D. Committee. Each student enrolled conducts or participates in discussions on assigned topics.

Individual Study and Research

596. Directed Individual Research. (½ to 3 courses)

598. Research for Master's Thesis. (½ to 3 courses)

599. Research for Doctoral Dissertation. (½ to 3 courses)

Microbiology and Immunology

(Department Office, 43-239 Center for Health Sciences; Graduate Student Affairs Office, 43-312 Center for Health Sciences)

John L. Fahey, M.D., *Professor of Microbiology and Immunology/Immunology and Oncology, and Professor of Medicine.*

William H. Hildemann, Ph.D., *Professor of Microbiology and Immunology/Immunology and Immunogenetics.*

Dexter H. Howard, Ph.D., *Professor of Microbiology and Immunology/Mycology, (Vice Chair of the Department).*

David T. Imagawa, Ph.D., *Professor of Pediatrics and Microbiology and Immunology/Virology.*

James N. Miller, Ph.D., *Professor of Microbiology and Immunology/Immunology and Bacteriology.*

Debi P. Nayak, D.V.Sc., Ph.D., *Professor of Microbiology and Immunology/Virology and Oncology.*

A.F. Rasmussen, Jr., M.D., Ph.D., *Professor of Microbiology and Immunology/Virology.*

Jack G. Stevens, D.V.M., Ph.D., *Professor of Microbiology and Immunology/Virology, Professor of Microbiology, and Professor of Neurology (Chair of the Department).*

Jerrold A. Turner, M.D., *Professor of Microbiology and Immunology in Residence, Professor of Medicine, and Associate Professor of Pathology.*

Marietta Voge, Ph.D., *Professor of Microbiology and Immunology/Parasitology.*

Randolph Wall, Ph.D., *Professor of Microbiology and Immunology/Molecular Biology.*

Felix O. Wettstein, Ph.D., *Professor of Microbiology and Immunology/Molecular Biology.*

Telford H. Work, M.D., M.Ph.H., D.T.M.&H., *Professor of Microbiology and Immunology, Professor of Infectious and Tropical Diseases, and Professor of Preventive Social Medicine.*

Ruth A. Boak, M.D., Ph.D., *Emeritus Professor of Microbiology and Immunology/Bacteriology, Emeritus Professor of Public Health, and Emeritus Professor of Pediatrics.*

David McVickar, M.D., Ph.D., *Emeritus Professor of Microbiology and Immunology.*

Margret I. Sellers, Ph.D., *Emeritus Professor of Microbiology and Immunology/Virology.*

Henry E. Weimer, Ph.D., *Emeritus Professor of Microbiology and Immunology/Immunology and Immunochemistry.*

Stephen Zamenhof, Ph.D., *Emeritus Professor of Microbiology and Immunology/Microbial Genetics.*

Benjamin Bonavida, Ph.D., *Associate Professor of Microbiology and Immunology/Immunology.*

George Fareed, M.D., *Associate Professor of Microbiology and Immunology/Virology.*

Sidney H. Golub, Ph.D., *Associate Professor of Microbiology and Immunology/Immunology in Residence, and Associate Professor of Surgery/Oncology.*

Ronald H. Stevens, Ph.D., *Associate Professor of Microbiology and Immunology/Molecular Biology.*

Jacob Zighelboim, M.D., *Associate Professor of Microbiology and Immunology/Immuno-Oncology, and Associate Professor of Medicine.*

John Bramhall, Ph.D., *Assistant Professor of Microbiology and Immunology/Molecular Biology.*

Asim Dasgupta, Ph.D., *Assistant Professor of Microbiology and Immunology/Virology.*

Michael Lovett, M.D., Ph.D., *Assistant Professor of Microbiology and Immunology/Molecular Biology, and Assistant Professor of Medicine.*

Seymour Froman, Ph.D., *Associate Clinical Professor of Microbiology and Immunology.*

Margery L. Cook, Ph.D., *Associate Research Virologist.*

Nina Dabrowa, Ph.D., *Associate Research Mycologist.*
Yoko S. Mullen, M.D., Ph.D., *Assistant Research Immunologist.*
Pranab Chanda, Ph.D., *Assistant Research Virologist.*
Alan Davis, Ph.D., *Assistant Research Virologist.*
Maurice L. White, Ph.D., *Lecturer in Microbiology and Immunology.*

The Ph.D. Degree

Admission Requirements. Requirements in addition to the University minimum requirements:

1. Bachelor's degree with a major in either the biological or physical sciences.

2. At least B+ in each of the following subjects: chemistry, physics and mathematics; at least B average in biology (in upper division and prior graduate study).

3. Three favorable letters of recommendation.

4. Graduate Record Examination is required (Verbal, Quantitative and Advanced Tests).

5. Acceptable Statement of Purpose.

6. An interview with members of the Department Graduate Student Committee when indicated. The Department only accepts candidates for the Ph.D. program.

For departmental brochures and/or application forms please write to: Graduate Student Affairs Office, Department of Microbiology and Immunology, UCLA School of Medicine, Los Angeles, CA 90024.

Advising. Graduate Adviser: Dexter H. Howard, Ph.D., Professor of Microbiology and Immunology (Mycology), Department of Microbiology and Immunology, UCLA School of Medicine, Los Angeles, CA 90024.

The Graduate Student Committee and the Graduate Adviser are responsible for advising students until they have selected a preceptor. Thereafter, the thesis preceptor serves as adviser.

The Graduate Adviser meets with each student at least before every registration date; however, the students may also seek his or the Graduate Student Committee's advice at any time they need it.

The Graduate Committee evaluates students at the end of the first year by a Departmental Written Qualifying Examination and by a review of their coursework. Students are informed in writing of their progress at this time. During the second year, the student selects a preceptor and responsibility for their evaluation shifts to the preceptor. The Graduate Adviser is available to help students with University requirements and to counsel with the student's preceptor. The student in consultation with his/her preceptor usually selects a doctoral committee during the second or third years of study.

Major Fields or Subdisciplines. Students are expected to be competent in both Microbiology and Immunology (see sections on *Course Requirements, Written and Oral Qualifying Examinations*). However, the students do their thesis work in one or another of the following subdisciplines.

A. Cell Biology (several areas of specialization available)

B. Immunology (several areas of specialization available)

C. Medical Bacteriology

D. Mycology

E. Parasitology

F. Virology (Animal Virology, Viral Oncology)

Course Requirements.

A. Microbiology and Immunology 202 survey course or equivalent (to be completed during the first year of study). Prior to the beginning of the Fall Quarter, a series of examinations will be given in the major subdivision of the M&I 202 course, *viz*, Bacteriology, Immunology, Virology, and Mycology/Parasitology. Students passing the examinations (80% or above) may elect not to take those subject areas. Those portions of the course which they do not pass or elect not to be examined in may then be taken as separate courses.

B. Directed Individual Study or Research 596 — participation in the laboratory rotation program (to be completed during the first year of study).

C. Three courses (12 units) in Biochemistry (prerequisites: Mathematics through Calculus and General Physical Chemistry). These courses will ordinarily be chosen from the following list but other substitutes may be selected with the approval of the Graduate Adviser.

Microbiology 204A — Molecular Biology of Bacterial Growth (½ course)
Microbiology 204B — Biochemical Genetics of Eukaryotic Cells (½ course)
Microbiology 204C — The Mammalian Cell as a Microorganism
Microbiology 204D — Protein Metabolism (½ course)
Microbiology 204E — Biological Membranes (½ course)
Chemistry 253 — Macromolecular Structure (one and ½ courses)
Chemistry 255 — Enzymes, Metabolism and Regulation (one and ½ courses)
Chemistry 257 — Physical Chemistry of Biological Macromolecules (½ course)
Chemistry 267 — Macromolecular Metabolism and Subcellular Organization (1½ courses)
Biological Chemistry 269 — Developmental Biochemistry (½ course)

Teaching Experience. Teaching assignment in one laboratory section for Microbiology and Immunology 201 (medical course), Microbiology and Immunology 203 (dental course), Microbiology and Immunology M212 (Immunology Workshop), or another laboratory course presented by the Department.

Written and Oral Qualifying Examinations.

A. *Written Qualifying Examinations.* The departmental Written Qualifying Examination is to be taken at the end of the first year of graduate study. The examination consists of two parts: 1) Molecular and Cell Biology (mandatory), and 2) four of the following six areas of Microbiology: Bacteriology, Genetics (and Immunogenetics), Immunology, Mycology, Parasitology and Virology. Up to two of the required areas in part two may be fulfilled by coursework, as defined by a list available from the Graduate Adviser. The coursework may be completed any time up to the end of the second year. A score of 75% is required to pass each part of the written examination. Parts failed may be retaken once.

B. *Oral Qualifying Examination.* The Oral Qualifying Examination is to be taken within three years of enrolling in the Department and is administered by the student's doctoral committee. The oral examination includes:

1. Preparation and defense of research proposal.

2. Explanation of research plans and results to date.

3. A demonstration of general knowledge of microbiology and immunology.

Advancement to candidacy is awarded upon satisfactory completion of the Oral Qualifying Examination.

Doctoral Committee. Conditions are those of Graduate Council.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional with the doctoral committee. A special seminar based on the completed thesis work is to be given by the student as the final requirement.

Time to Degree.

From graduate admission to the Written Qualifying Examination — three to four quarters.

From graduate admission to the Oral Qualifying Examination — nine quarters.

From graduate admission to the award of the degree — 15 quarters (maximum).

Disqualification. The need to terminate a student may arise for three cardinal reasons:

A. Continued inability to maintain a grade point average of 3.0.

B. Failure of a section of the departmental Written Qualifying Examination more than once.

C. Failure of the Oral Qualifying Examination for a second time.

The decision to terminate a student for any of these reasons is made by the departmental Graduate Committee.

Appeals. Since reasons A and C are essentially University requirements, no specific departmental machinery is available for appeal of

the decision. Students are counseled about B and recognize the consequences involved. However, if necessary, a student can come before the Graduate Committee, explain the situation, and suggest remedial action which would satisfy the intent of the regulation. *e.g.*, a curriculum alternative(s) to the written examination. The Committee then evaluates such cases individually.

Graduate Courses

Immunology

M206. Secretory and Gastrointestinal Immunity. (Same as Oral Biology M206.) Lecture, two hours. The anatomy and physiology of the oral cavity, the intestines, and the related lymphatic and blood vascular systems will be reviewed in reference to the immune system. The secretory and systemic immune systems will be discussed in detail with particular emphasis on the unique properties of SIgA. The ability to process enteric antigens, to respond, and to regulate enteric immunity will be discussed in terms of recent experimental findings. The role that enteric immunity may play in diseases of the GI tract, such as dental caries and inflammatory bowel diseases will be presented. The class will meet for 2 hours one day per week. Students will participate in discussions following each lecture and will present seminars based on a review of the relevant scientific literature. 20 hours. To be offered Spring Quarter. Mr. Riviere

M212. Laboratory Procedures in Immunological Research. (½ course) (Same as Microbiology M212.) Prerequisites: course M185 or equivalent and consent of instructor. A series of 12 intensive laboratory workshops designed to acquaint the student with the advanced methodologies utilized for immunological research. Workshops will be offered at regular intervals and will have a duration of 2-3 days. Successful completion of four workshops constitutes the requirements for one course. Enrollment will be limited to 25. May be repeated for credit if different projects are undertaken. Graded S/U. Students must enroll through Microbiology and Immunology. Mr. Stevens

254. Immunogenetics. (½ course) Review of current literature in the field of immunogenetics, with emphasis on fundamental studies involving genetic and immunologic principles and techniques. Selected topics will be discussed and results interpreted; conclusions and experimental methods will be evaluated. Mr. Hildemann (Sp)

M257. Seminar in Host Parasite Relationships. (Same as Microbiology M257.) Lecture, two hours. Prerequisite: consent of instructor. (Same as Microbiology.) In the course recent advances in our knowledge of host-parasite interactions and means of controlling the parasites are discussed. Mr. Miller, Mr. Pickett (Sp)

M258A. Advanced Immunology. (½ course) (Same as Biology M250A and Microbiology M258A.) Prerequisites: the equivalent of course M185 or 202 or consent of instructor. This two term lecture/discussion course is designed to provide continuity between the basic immunology courses and the original research literature. The major aspects of the immune system will be intensively examined with emphasis on fundamental principles and on advances of the past five years. The first term will consist of lectures dealing with the development of B and T lymphocytes and the interaction of these two lymphocyte subpopulations in the production of immunoglobulin. In addition to the lectures there will be discussion sessions for those enrolled in the course. To be offered in the Fall Quarter of each academic year. Grade or S/U. Mr. Zighelboim (F)

M258B. Advanced Immunology. (½ course) (Same as Biology M250B and Microbiology M258B.) Prerequisites: the equivalent of course M185 or 202 and M258A or consent of instructor. A continuation of M258A which will consider the details of antibody structure, T lymphocyte function and selected topics of broad immunological significance. To be offered in the Winter Quarter of each academic year. Grade or S/U. Mr. Zighelboim (W)

M258C. Immunochemistry. (½ course) (Same as Microbiology M258C.) Prerequisites: the equivalent of course M185 or 202 and M258A or consent of instructor. The structure of the immunoglobulin molecule and of antigenic determinance and of the components of the complement system will be considered in detail. The format will include lectures and also readings in the primary literature with student seminars. To be offered in the Winter Quarter of each academic year. Grade or S/U. Mr. Stevens (W)

M260. Immunology Forum. (½ course) (Same as Microbiology M260.) Prerequisite: course M185. A broad range of current topics in immunology will be presented and discussed at an advanced frontier level. This is a continuing UCLA-wide, general graduate level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments. Mr. Cooper

261. Tumor Immunology. (½ course) Prerequisite: course M258 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. Letter grade or S/U grading. Mr. Golub (Sp)

262. Seminar in Immunobiology of Cancer. (½ course) 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 will be discussed and evaluated. Graded S/U. Mr. Bonavida

M263. Cellular Immunology Seminar. (½ course) (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

276. Viral Immunology. (½ course) Prerequisites: course 202 (or equivalent) and consent of instructor. This course will focus on selected areas of immunovirology: principles of non-specific and specific immunity to viruses, immunological effector mechanisms in the maintenance of viral latency, influence of virus infections on different immune functions and the immune response to virally induced tumors.

Microbiology

201. Microbiology and Immunology. (2½ courses) Lectures and laboratory. 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. For medical students only.

202A. Fundamental of Immunology. (½ course) (Formerly numbered 202.) Prerequisite: consent of instructor. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cell-mediated immune functions. For graduate students only. To be offered every Fall Quarter (class begins in the first week of September).

202B. Medical Bacteriology. (½ course) (Formerly numbered 202.) 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. For graduate students only.

202C. Medical Virology. (½ course) (Formerly numbered 202.) Prerequisite: consent of instructor. Biological properties of animal viruses; replication; methods of detection; interactions with host cells and multicellular hosts, introduction to tumor viruses. For graduate students only.

202D. Medical Mycology and Parasitology. (½ course) (Formerly numbered 202.) 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. For graduate students only.

210. Medical Mycology. (½ course) Prerequisites: Microbiology 101, 103 and 185: 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. (½ course) Prerequisites: Microbiology 101, 103 and 185: recommended Microbiology 110. Consent of instructor may be obtained in special cases, Laboratory application of principles discussed in 210. Laboratory must be taken by undergraduate students. Mr. Howard (Sp)

214. Bacterial Pathogenesis. (½ course) Prerequisite: 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.

M215. Interdepartmental Course in Tropical Medicine. (½ course) (Same as Medicine M215, Pathology M215 and Pediatrics M215.) Prerequisites: basic courses in microbiology and parasitology or infectious diseases in the Schools of Medicine or Public Health. The course draws upon 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. Lectures, demonstrations and audiovisual materials will be used to describe diseases which are prevalent in or localized to certain geographic areas. Although major emphasis will be in infectious diseases, problems in nutrition and exotic non-infectious diseases will be covered. A syllabus will supplement the topics covered in the classroom. Graded S/U.

251. Seminar in Microbiology and Immunology. (½ course) Consideration of the history of infectious diseases, their host-parasite relationships, etiology, pathogenesis, epidemiology, diagnosis, and immunity. Grade or S/U. Mr. Howard (W)

255. Seminar in Medical Mycology. (½ course) 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 will be 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. Must be taken in conjunction with 210 by graduate students. Graded S/U. Mr. Howard (Sp)

M257. Seminar in Host-Parasite Relationships. (½ course) (Same as Microbiology M257.) This course discusses recent advances in our knowledge of host-parasite interactions and means of controlling the parasites. Mr. Miller, Mr. Pickett (Sp)

Cell Biology and Virology

208. Animal Virology. Prerequisites: courses in general biochemistry and in 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. The course encompasses an overview of animal viruses including viral structure, virus cell interaction, virus replication and viral oncogenesis. Special emphasis is placed in 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)

M226. Chromosome Structure and Regulation. (Same as Biological Chemistry M226, Biology M226, Chemistry M226, and Microbiology M226.) Prerequisite: consent of instructor. Lectures and panel discussions on the structural and functional organization of eukaryotic chromosomes. Graded S/U.

250. Topics in New Biology. Lectures and student seminar presentations. A review of selected current topics in molecular and cell biology. Topics will be selected from recent experimental results on the organization, expression and regulation of genes in eukaryotic cells. Graded S/U. Mr. Wall (W)

252. Seminar in Viral Pathogenesis. (½ course). Prerequisites: Bacteriology 102, Microbiology & Immunology 201 or equivalent, or consent of instructor. A consideration of basic phenomena involved in pathogenesis of viral disease, using carefully selected examples. Emphasis will be given to those systems which have been meaningfully dissected by quantitative immunological and molecular biological methods. Mr. Stevens (Sp)

M256. Seminar in Viral Oncology. (½ course) (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

264. Molecular Microbiology and Cell Biology. (½ course) Discussion, two hours. Prerequisites: course 202, 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. Graded S/U. Mr. Wettstein (F)

265. Co-Seminar in Animal Virology. (½ course) Prerequisites: course 208 or must be concurrently enrolled in course 208 and consent of instructor. Critical review and analysis of the selected papers in the field. Topics will include structure and biology of animal viruses and virus-host interaction at the cellular and molecular level. Mr. Nayak (Sp)

271. Research Seminar in Virology. (½ course) Prerequisite: consent of instructor. Selected topics in virology including viral structures, host virus interaction, and regulation of viral and host gene expression will be presented and discussed in depth. Mr. Nayak (Sp)

M293. Major Concepts in Oncology. (Same as Microbiology M293, Dentistry/Oral Biology M293, and Pathology M293.) Prerequisite: Graduate Standing or consent of instructor. Course designed for graduate students contemplating research in oncology. Lecture. 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. Letter grade or S/U grading.

M298. Seminar in Current Topics in Molecular Biology. (½ course) (Same as Biological Chemistry M298, Biology M298, Chemistry M298, Microbiology M298, and Molecular Biology M298.) Prerequisites: approval by the instructor and by the Graduate Adviser of the Interdepartmental Molecular Biology Ph.D. Committee. Each student enrolled conducts or participates in discussions on assigned topics. May be repeated for credit.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 1 course) Laboratory by arrangement. Consent of Graduate Adviser.

597. Preparation for the Qualifying Examination for the Ph.D. in Microbiology and Immunology. (½ to 1½ courses)

599. Research for and Preparation of the Doctoral Dissertation in Microbiology and Immunology. (½ to 2 courses) Prerequisite: Bacteriology and/or Biochemistry. Research on an original problem in the field of Microbiology and Immunology, to be selected by the graduate student with the advice of the instructor. Fields of study may be in bacteriology, immunochemistry, immunogenetics, microbial genetics, mycology, parasitology, virology, viral oncology, tumor biology, or cell biology.

Molecular Biology (Interdepartmental)

(Molecular Biology Institute Bldg. Room 168)

D.E. Atkinson, Ph.D., *Professor of Chemistry.*
Marcel A. Baluda, Ph.D., *Professor of Viral Oncology.*
Paul D. Boyer, Ph.D., *Professor of Chemistry.*
William R. Clark, Ph.D., *Professor of Immunology.*
R. John Collier, Ph.D., *Professor of Microbiology.*
Richard E. Dickerson, Ph.D., *Professor of Chemistry.*
David S. Eisenberg, Ph.D., *Professor of Molecular Biology in Chemistry.*
F.A. Eiserling, Ph.D., *Professor of Microbiology.*
John Fessler, Ph.D., *Professor of Molecular Biology in Biology.*
C. Fred Fox, Ph.D., *Professor of Molecular Biology in Microbiology.*
Dohn G. Glitz, Ph.D., *Professor of Biological Chemistry.*
Issac M. Harary, Ph.D., *Professor of Biological Chemistry.*
Harvey Herschman, Ph.D., *Professor of Biological Chemistry.*
James A. Lake, Ph.D., *Professor of Molecular Biology in Biology.*
George Laties, Ph.D., *Professor of Plant Physiology.*
Donald P. Nierlich, Ph.D., *Professor of Microbiology.*
George Popjak, Ph.D., *Professor of Psychiatry and Biological Chemistry.*
Dan S. Ray, Ph.D., *Professor of Molecular Biology in Biology.*
W.R. Romig, Ph.D., *Professor of Microbiology.*
Winston A. Salser, Ph.D., *Professor of Molecular Biology in Biology.*
Verne N. Schumaker, Ph.D., *Professor of Molecular Biology in Chemistry.*
David S. Sigman, Ph.D., *Professor of Biological Chemistry.*
Larry Simpson, Ph.D., *Professor of Cell Biology.*
Roberts A. Smith, Ph.D., *Professor of Chemistry.*
Clara Szego, Ph.D., *Professor of Biology.*
Philip Thornber, Ph.D., *Professor of Molecular Biology in Biology.*
Joan S. Valentine, Ph.D., *Professor of Chemistry.*
Randolph Wall, Ph.D., *Professor of Microbiology and Immunology.*
Felix Wettstein, Ph.D., *Professor of Molecular Biology in Microbiology and Immunology.*
Charles A. West, Ph.D., *Professor of Chemistry.*
Gary Wilcox, Ph.D., *Professor of Microbiology.*
Irving Zabin, Ph.D., *Professor of Biological Chemistry.*
Clifford Brunk, Ph.D., *Associate Professor of Biology.*
George C. Fareed, M.D., *Associate Professor of Molecular Biology in Microbiology and Immunology.*
Michael Grunstein, Ph.D., *Associate Professor of Molecular Biology.*
John M. Jordan, Ph.D., *Associate Professor of Molecular Biology in Chemistry.*
Harumi Kasamatsu, Ph.D., *Associate Professor of Molecular Biology in Biology.*
Emil Reisler, Ph.D., *Professor of Molecular Biology in Chemistry.*
Richard L. Weiss, Ph.D., *Associate Professor of Chemistry.*
William T. Wickner, M.D., *Associate Professor of Molecular Biology in Biological Chemistry.*
Bernardine Wisnieski, Ph.D., *Associate Professor of Microbiology.*
Arnold J. Berk, Ph.D., *Assistant Professor of Microbiology.*
Kathryn L. Calame, Ph.D., *Professor of Biological Chemistry.*
Steven G. Clarke, Ph.D., *Assistant Professor of Chemistry.*
Kathleen Dixon, Ph.D., *Professor of Biological Chemistry.*
Jay Gralla, Ph.D., *Assistant Professor of Molecular Biology in Chemistry.*
Robert P. Gunsalus, Ph.D., *Professor of Microbiology.*
Judith Lengyel, Ph.D., *Assistant Professor of Molecular Biology in Biology.*
Michael Lovett, Ph.D., *Assistant Professor of Medicine.*
Harold G. Martinson, Ph.D., *Assistant Professor of Chemistry.*
Kevin McEntee, Ph.D., *Professor of Biological Chemistry.*
Allan J. Tobin, Ph.D., *Assistant Professor of Biology.*
Owen Witte, Ph.D., *Assistant Professor of Microbiology.*

The Ph.D. Degree

The Ph.D. degree program 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.

Admission Requirements. In general, recommended undergraduate training for the Ph.D. degree program includes a major in a biological or physical science. Coursework should include mathematics through calculus, one year each of general and of organic chemistry, one year each of physics and 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 will be expected to fulfill these early in the graduate program. In addition to University requirements, six quarters of the M298 laboratory work 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. There are no special application forms, but copies of materials sent to Graduate Admissions Office should also be sent directly to MBI.

Address for information: Graduate Office, Molecular Biology Institute, UCLA, Los Angeles, CA 90024.

Advising. Graduate Adviser: Dr. John H. Fessler.

Upon entering, a provisional advisory committee of three faculty members is appointed. After completing three one-quarter rotations, the student may choose a permanent Ph.D. adviser. In the initial year, there is a quarterly review by the Advisory Committee. The Ph.D. committee makes an overall assessment on the basis of annual reports from the adviser.

Course Requirements. The usual program is two regular courses per quarter or the equivalent of 8 quarter units of upper division or graduate work. Six quarters of M298, Seminar in Current Topics in Molecular Biology, are required.

Teaching Experience. Teaching experience is encouraged although it is not a requirement for the degree.

Written and Oral Qualifying Examinations. Examinations will be given in the M298 course, and four must be passed. An Oral Qualifying Examination on original research proposed by the candidate independently of the Ph.D. adviser, and on a topic distinct and separate from the student's thesis research, will be held usually during the student's second year in the program. A "Midstream Seminar" is normally presented during the third year and must be presented at least six months prior to the Final Oral Examination.

Doctoral Committee. This committee consists of a minimum of five faculty members from the University, and must conform to the regulations governing the nomination of doctoral committees. It must include three faculty who are "MBI core faculty" (i.e., have served as research advisers for an MBI student for at least two years, but who may or may not be Members, Associates or Affiliates of the MBI).

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is required of all students for the degree.

Time to Degree. An oral examination for advancement to candidacy should be taken, before the end of the sixth quarter. The average total time to complete the degree is 15 quarters. An oral "midstream" report should be given some time between being advanced to candidacy and six months before defense of thesis.

Disqualification. Termination of graduate status may be recommended by the Chair of the Interdepartmental Ph.D. Committee, after consultation with the student and his/her adviser (or his/her Student Guidance Committee). Disqualification may be recommended if a student fails to maintain an overall grade point average of 3.0, does not participate in required elements of the Ph.D. program (including laboratory rotations and seminars), or fails to maintain normal progress toward the degree as outlined under *Time to Degree* and *Final Oral Examination*.

Appeals. A recommendation for dismissal may be appealed to the entire Interdepartmental Ph.D. Committee; opinions of other interested faculty members will be considered, if requested by the student.

Graduate Courses

M298. Molecular Biology. Seminar in Current Topics in Molecular Biology. (Same as Microbiology M298, Biological Chemistry M298, Biology M298, Chemistry M298, and Microbiology and Immunology (Cell Biology and Virology Section) M298.)

Courses Related to Molecular Biology

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 a student's program.

For specific information regarding the Ph.D. Degree Program in Molecular Biology, please refer to the Graduate Adviser in that program. For details and descriptions of the graduate courses offered in departments related to Molecular Biology, please refer to the list below.

Biological Chemistry M253, 255, M257, 259, M261, 266, M267, M269, M298.

Biology 255, 227, 229, M230, M233A-M233B, M234, 238, 280, 294, M298.

Chemistry M230, M253, M255, M257, 259, M261, 266, M267, M269, M298.

Microbiology 203, M233A-M233B, 250, 251, M258A-M258B, 262, 285.

Microbiology and Immunology

Cell Biology and Virology Section 208, 250, 256, 265, M298.

Immunology Section 254, M258A-M258B, 261, 262, 264.

Physiology 202, 225.

Music

(Department Office, 2539 Schoenberg Annex; Student Services Office, 2539 Schoenberg Annex)

Alden B. Ashforth, Ph.D., *Professor of Music.*
Elaine R. Barkin, Ph.D., *Professor of Music.*
Murray C. Bradshaw, Ph.D., *Professor of Music.*
Peter C. Crossley-Holland, M.A., *Professor of Music.*
Frank A. D'Accone, Ph.D., *Professor of Music.*
Paul E. Des Marais, M.A., *Professor of Music.*
Maurice Gerow, Ph.D., *Professor of Music.*
Marie Louise Gollner, Ph.D., *Professor of Music.*
Frederick F. Hammond, Ph.D., *Professor of Music.*
Thomas F. Harmon, Ph.D., *Professor of Music and University Organist.*
Richard A. Hudson, Ph.D., *Professor of Music.*
William R. Hutchinson, Ph.D., *Professor of Music.*
Nazir A. Jairazbhoy, Ph.D., *Professor of Music.*
Henri Lazarof, M.F.A., *Professor of Music.*
David Morton, Ph.D., *Professor of Music.*
J.H.K. Nketia, B.A., *Professor of Music.*
James W. Porter, M.A., *Professor of Music.*
Gilbert Reaney, M.A., *Professor of Music.*
Abraham A. Schwadron, Mus. A.D., *Professor of Music (Chair of the Department).*
Robert M. Stevenson, Ph.D., *Professor of Music.*
Roy E. Travis, M.A., *Professor of Music.*
Robert L. Tusler, Ph.D., *Professor of Music.*
D.K. Wilgus, Ph.D., *Professor of English and Anglo-American Folk Song.*
Edwin H. Hanley, Ph.D., *Professor of Music.*
Mantle L. Hood, Ph.D., *Emeritus Professor of Music.*
Boris A. Kremenliev, Ph.D., *Emeritus Professor of Music.*
W. Thomas Marrocco, Ph.D., *Emeritus Professor of Music.*
Robert U. Nelson, Ph.D., *Emeritus Professor of Music.*
H. Jan Popper, Ph.D., *Emeritus Professor of Music.*
Clarence E. Sawhill, Mus. D., *Emeritus Professor of Music.*
Malcolm S. Cole, Ph.D., *Associate Professor of Music.*
Charlotte A. Heth, Ph.D., *Associate Professor of Music.*
Paul V. Reale, Ph.D., *Associate Professor of Music.*
Robert S. Winter, Ph.D., *Associate Professor of Music.*
Jacqueline C. DjeDje, Ph.D., *Assistant Professor of Music.*
David E. Draper, Ph.D., *Assistant Professor of Music.*
Max. L. Harrell, Ph.D., *Assistant Professor of Music.*
Kathleen R. Murray, Ph.D., *Assistant Professor of Music.*
A. Jihad Racy, Ph.D., *Assistant Professor of Music.*
James E. Westbrook, D.M.A., *Assistant Professor of Music.*

•

Gerald E. Anderson, M.S., *Visiting Lecturer in Music.*
Salome R. Arkatov, M.A., *Visiting Lecturer in Music.*
Elliot Asarnow, Ph.D., *Visiting Lecturer in Music.*
Mario Carta, *Adjunct Assistant Professor of Music.*
Robert Fleisher, D.M.A., *Visiting Lecturer in Music.*
Jeffrey Goodman, M.A., *Visiting Lecturer in Music.*
Robyn Graham, B.M., *Visiting Lecturer in Music.*
Gary G. Gray, M.M., *Lecturer in Music.*
John A. Guarnieri, *Visiting Lecturer in Music.*
John L. Hall, M.M., *Lecturer in Music.*
Johana Harris, *Lecturer in Music.*
Sybil D. Hast, M.A., *Visiting Lecturer in Music.*
William Hatcher, M.M., *Lecturer in Music.*
Nina Hinson, M.M., *Visiting Lecturer in Music.*
Maureen D. Hooper, Ed.D., *Senior Lecturer in Music.*
John T. Johnson, B.M., *Visiting Lecturer in Music.*
Bess Karp, M.A., *Lecturer in Music.*
Yukiko Kamei, *Visiting Lecturer in Music.*
Leon Knopoff, Ph.D., *Professor of Geophysical and Physics.*
Samuel Krachmainick, *Senior Lecturer in Music.*
Kobla Ladzekpo, B.F.A., *Visiting Lecturer in Music.*
Sidney M. Lazar, M.A., *Visiting Lecturer in Music.*
Danny Lee, *Visiting Lecturer in Music.*
James R. Low, B.M., *Visiting Lecturer in Music.*
Tsun Y. Lui, *Lecturer in Music.*
Shirley L. Marcus, B.M., *Visiting Lecturer in Music.*
Lou Anne Neill, M.A., *Visiting Lecturer in Music.*
Theodore Norman, *Visiting Lecturer in Music.*
Michael R. O'Donovan, *Visiting Lecturer in Music.*
Nils Oliver, M.M., *Visiting Lecturer in Music.*
Barbara R. Patton, B.A., *Senior Lecturer in Music.*
Mitchell T. Peters, M.M., *Visiting Lecturer in Music.*
Warren Pinckney, M.F.A., *Acting Assistant Professor of Music.*
David Raksin, B.M., *Visiting Lecturer in Music.*
Sven H. Reher, M.A., *Visiting Lecturer in Music.*
Mark Richman, M.M., *Visiting Lecturer in Music.*
Lois Rosow, Ph.D., *Visiting Lecturer in Music.*
Peggy Ann Sheffield, M.M., *Lecturer in Music.*
Donald J. Staples, B.A., *Visiting Lecturer in Music.*
Sheridon W. Stokes, *Lecturer in Music.*
Suenobu Togi, *Lecturer in Music.*
Alexander Treger, *Visiting Lecturer in Music.*
Aube Tzerko, B.M., *Senior Lecturer in Music.*
Allan Vogel, D.M.A., *Visiting Lecturer in Music.*
Donn E. Weiss, M.M., *Senior Lecturer in Music.*
Ikuko Yuge, *Visiting Lecturer in Music.*
Paul Zibits, M.M., *Visiting Lecturer in Music.*

General Information Applicable to all Degrees

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, compositon and music education; and Master of Fine Arts in Performance Practices in all classical solo instruments, voice, opera, and conducting.

Teaching Credentials. Students may earn credentials for teaching music and other subjects in California elementary and secondary schools in conjunction with the 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.

Further information on programs of study, entrance requirements — including examinations, auditions etc., — may be obtained from the Student Services Office, 2539 Schoenberg Annex.

Admission Timetable

Application for admission/fellowship is due ..... December 30

Supplementary application materials are due ..... January 30

Examinations will be administered ..... about February 1

Notice of acceptance or denial will be sent ..... by March 15

Late applications will be accepted until ..... February 15

Supplementary application materials are due ..... April 1

Examinations will be administered ..... early April

Notice of acceptance or denial will be sent ..... by May 30

Failure by the applicant 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.

Admission Requirements. Applicants for the M.A. and M.F.A. must have completed a Bachelor of Arts degree with a major in music (or the equivalent degree) as described in the *Undergraduate Catalog*. 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 the equivalent degree) as described in this catalog. The degree normally will have been taken in the same field of concentration as the proposed doctorate. If a student wishes 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 (a) take the entrance examination (see below); (b) submit a letter describing their background of study and stating their reasons for wishing to pursue graduate studies in music; (c) request three former instructors to write letters of recommendation on their behalf (form letters are included in the application for admission); and (d) submit written examples of their work. For all branches of Musicology and Music Education, a paper on an appropriate subject in the applicant's area should be submitted; for Composition, musical scores; for M.F.A. applicants, a repertoire list and sample programs or concerts. M.F.A. applicants will also be required to demonstrate by audition their general musical proficiency in their area of specialization. Ph.D. applicants should submit the M.A. thesis or composition, if possible. No application can be considered until the examination has been taken and all of the above materials have been received.

Teaching Experience: Applicants for the Ph.D. in music education will be required to have two years teaching experience at the elementary or secondary levels to be considered for admission.

Entrance Examination: The entrance examination will be administered at Schoenberg Hall on the UCLA campus only twice a year (see above timetable). Applicants outside the Southern California area who find it impossible to take the examination on campus can make arrangements with the Department of Music to take the examination in absentia on or close to one of the dates listed above. Further information will automatically be sent after the application has been received. The entrance examination is approximately five hours in length and consists of five parts: (1) written exercises in harmony and counterpoint, (2) harmonic and formal analysis, (3) identification of musical terms, (4) an essay on each of two historical subjects, one before and one after 1750, and (5) melodic and harmonic dictation, sight-singing, piano sight-reading, and also performance in the applicant's principal performance medium. In addition to the above, M.F.A. applicants must do an audition; music education applicants (both M.A. and Ph.D.) must take a comprehensive examination in that field.

The applicants entrance examination and file are evaluated by the appropriate area council and the Graduate Committee of the Music Department to determine fitness for graduate study.

Advising. Each student must plan a program under the guidance of the Graduate Adviser in the field of concentration. Students are required to contact their advisers at the beginning of each quarter and obtain the necessary signature on the Study List Card.

The Graduate Adviser for each area of specialization is assigned by the Chair on a yearly basis. Students may contact the Student Services Office at the beginning of Fall Quarter for the name of their adviser.

An ongoing evaluation of the student's progress toward the degree is made by the Graduate Adviser each quarter in consultation with the student. Any problems are reviewed by the area council of the student's specialization. Students file their signed study List Cards with the Student Services Office for enrollment in classes. In order to receive a tentative study list from the Registrar's Office the cards must be filed by the third day of classes. Students are responsible for their Official Study Lists (mailed by the Registrar's Office at the end of the second week of classes) and should check them for accuracy.

Deadline dates for leaves of absence, adding/dropping of courses, submission of Advancement to Candidacy forms, submission of thesis/dissertation drafts to committees, and filing of theses/dissertations with the Graduate Division are listed in the Schedule of Classes each quarter.

Language Examination Administration. Language requirements specific to each degree are listed in the respective sections below. French, German, Russian, and Spanish examinations are administered through the Educational Testing Service and require a score of 500 to pass. Students may sign up and register for the test at the University Extension Cashier's Office, 10995 LeConte at the corner of Gayley (University Extension Building). The schedule of test dates is posted on the Graduate Bulletin Board in the music building (first floor, across from SH 1420) and in the Student Services Office. Arrangements for language tests, other than the above, are made through the Language Examiner of the Graduate Division (1225 Murphy Hall).

Committee Appointments. The language requirement and a majority of the coursework must be completed before a request for any committee or topic approval may be submitted. Forms are obtained from the Student Services Office and returned to that office for processing. All student committees are appointed by the Graduate Committee of the Music Department. In all cases, except the Guidance Committee for the Ph.D., the student may select the chair, who will guide the thesis or dissertation, and suggest the other members of the committee, according to the guidelines given in each degree section, subject to the approval of the Graduate Committee.

500 Series Course Summary

Course	Unit Value	Type Grading
596A	2 or 4	letter
596B	2 or 4	letter
596C	2 or 4	letter
597	2 or 4	S/U
598	4-6-8	S/U
599	4-6-8	S/U

Limitations on the number of units applicable to the master's degree are listed under "Course Requirements" in the M.A. and M.F.A. sections below. There is no limitation for the Ph.D.

Disqualification. The specific conditions which may lead to termination are: (1) terminal master's degree (recommendation from the

student's master's committee); (2) scholarship (critical recommendation from the Graduate Committee); and (3) failure to make normal progress toward the degree (recommendation from the area council in the student's specialization and from the Graduate Committee).

In all cases, the student's personal and academic progress are discussed in depth by the council or committee concerned with making the recommendation. A recommendation for termination is forwarded to the Department Chair for final review and decision. If termination is upheld, the Chair notifies the student in writing.

Appeals. Should the student wish to appeal such a decision, he/she should submit a letter to the Chair stating the reasons for appeal and the Chair will transmit it to the area council for reconsideration.

Master of Arts Degree

For *Major Fields* and *Admission Requirements* see "General Information Applicable to all Degrees" above.

Foreign Language Requirement. A 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. Students lacking these requirements upon entrance must begin language study during the first year of residence.

Course Requirements. General Requirements: Students are required to complete a minimum of nine courses, five of which must be at the 200 level. Only 4 units of 596A, 596B, or 596C; and 4 units of 597 or 598 may apply toward the total course requirement. No more than 4 units of all types of 500 series courses may be applied toward the minimum graduate course requirement. Upper division courses that may be counted toward the minimum of nine courses include: 103A-103B, 104A-104B, 106A*-106B*, 107A*-107B*-107C*, 108, 109A-109B-109C, 110A†-110B, 111A†-111B, 112A-112B, 118, 119A-119B-119C, 127A-127B-127C-127D-127E-127F, 140A**-140B**-140C**, 141, 142A-142B, 143A-143B, 145, 146A-146B-146C, 147A-147B, 148, 149, 151A-151B, 152, 153A-153B-153C, 156A-156B, 157, 175, M180, M181, 184, 185, 187. A maximum of one course in chamber ensembles (175) may be counted toward the degree. Course 598 serves to guide the preparation of the thesis and should normally be taken during the last quarter of residence.

Course of Study: Course requirements for each field of study are as follows:

Historical Musicology: 200A, 201ABC, either 210 or 211 (students planning to enter the Ph.D. program are strongly advised to take both 210 and 211 in the first year of residence), 250A or 250B, two terms of 260A-260F, and one course elective upon the recommendation of the Graduate Adviser.

Systematic Musicology: 200A-200B, three terms of 272, one from 255, 269, 273, or 275; and three courses elective upon the recommendation of the Graduate Adviser.

Ethnomusicology: 190A-190B, 200A-200B; and five courses elective upon the recommendation of the Graduate Adviser.

Composition: 200A, one from 251A-251D, three terms of 252 (252A, B, and C in sequence, with the option of substituting 596A for 252C), 266A or 266B, and three courses elective upon the recommendation of the Graduate Adviser.

Music Education: 185, 200A-200B, two terms of 270A-270F, and four courses elective upon the recommendation of the Graduate Adviser. Students may elect either the Thesis Plan or the Comprehensive Examination Plan (see below).

Comprehensive Examination Plan. (Music Education only — optional.) The Comprehensive Examination Plan is acceptable only for those not going on to the Ph.D. The examination the student is expected to pass is in lieu of a thesis, and consists of a 3-hour examination in one selected area (general, choral, or instrumental); a 3-hour examination in the broad field of Music Education; and a 2-hour examination in either Theory, Composition, Historical Musicology, Systematic Musicology, or Ethnomusicology.

If a student fails one or more parts of the Comprehensive Examination, he/she may be reexamined upon the recommendation of the committee.

The committee includes three members of the Department, all in the professional ranks; two in Music Education and one in the area of the third examination.

Thesis Plan. In all areas except Composition, the thesis will be an extended essay. For students in Composition, the thesis will be a work proposed by the student and approved by the Composers' Council. Students in Music Education may elect either the Thesis Plan or the Comprehensive Examination Plan (see above).

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.

Orientation meetings on the format of the thesis are held quarterly by the Manuscript Adviser (134 Powell Library). Notices of these meetings are posted on the Graduate Bulletin Board (first floor, across from 1420 Schoenberg Hall) and in the Student Services Office.

Master's Committee. The master's committee is made up of three members from the Music Department, all in the professional ranks; two in the student's area of specialization, one member outside the student's area. Occasionally, faculty outside the Music Department may serve in lieu of one of the departmental members.

Advancement to Candidacy. Forms are obtained from the Student Services Office and returned to that office for processing. The forms should be submitted no later than one week before the deadline date posted in the *Schedule of Classes* in the quarter in which the degree is to be granted.

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.

When the student is ready for the Final Oral Examination, the Student Services Office should be notified; they will contact the committee members and arrange a meeting.

Time to Degree. For a full-time student with no deficiencies upon admission to graduate status, the normal progress toward the degree is as follows:

(a) From graduate admission to completion of required courses: six quarters.

(b) From graduate admission to award of degree: seven quarters.

Master of Fine Arts Degree

For *Major Fields* and *Admission Requirements*, see "General Information Applicable to All Degrees" above.

Foreign Language Requirement. A 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 satisfied by the end of the first year of residence.

Terminology Examination: All M.F.A. students will be required to pass a departmental 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 the second year of residence.

Course Requirements. *General Requirements:* Students are required to complete a minimum of 18 courses, including a minimum of six at the 200 level and six or more in the 400 series. Only 4 units of 596A, 596B, or 596C, and 8 units of 598 may apply toward the total course requirement. No more than 4 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. The degree is normally completed in three years.

Course of Study: Course requirements are as follows: 200A, three terms of 261A-261F, six terms of 400 level performance instruction, two

*Will not count for students whose emphasis is Composition.
**Will not count for students whose emphasis is Music Ethnomusicology.
†Will not count for students whose emphasis is Music Education.

terms (8 units) of 598, and six electives. Conducting students will declare either a choral or instrumental specialization. Six terms of 475 will be required in the area of specialization and at least two in the other. (On a 2-year program, the ratio would be four to one.) Recommended electives are: 108, 127A-127F, 140ABC, 175, 187, 596, and additional courses from the 200 and 400 level series. A maximum of 4 units in chamber ensembles (175) may be counted toward the minimum 18 courses. Course 598 serves to guide the preparation of the final project and should normally be taken during the last two quarters of residence.

Performance Requirements: With the exception of the first quarter in residence, the student 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. Program notes for the annual performance project, written by the candidate, must be submitted with the program to the Graduate Adviser in Performance Practices at least one month before the concert date. Conducting students will 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 will present a minimum of one work, or a substantial movement of a longer work, in a public concert. Programs should be submitted to the Student Services Office for the student's file.

Final Project. This is to be completed during the last year of residence. A solo recital and appropriate scholarly paper will be required in all areas. In addition, a major operatic performance is required in the area of opera. Conducting students will 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 (15-25 pages in length) and will be concerned with performance problems which can be elucidated through research and analysis. The topic for the final project will be decided by the student in consultation with the committee chair, who will be responsible for supervising the work. Pieces drawn from or relating to the study will be included in the final recital. Both the paper and the recital will be evaluated by the student's committee.

A completed first draft of the scholarly paper must be submitted to the student's committee members by the first day of classes of the quarter in which the final recital has been scheduled. If this requirement is not met, the recital will be postponed until the next regular academic quarter in which this requirement can be met.

Concise, well-written program notes, including a brief biography of the student must be written by the candidate and submitted to the Graduate Adviser in Performance Practices for approval at least one month prior to the final recital. Publicity information for the final recital must be submitted to the Graduate Adviser at the begining of the previous quarter.

The final version of the scholarly paper, with the accompanying recital program, must be submitted in the format of a thesis. (Students should contact the Manuscript Adviser — 134 Powell Library — for information.) The final paper, signed by all M.F.A. committee members must be submitted in duplicate (two thesis-quality xeroxes or the original and one xerox copy to the Student Services Office by the last day of classes in the quarter in which the student is to graduate.

The terminology examination, language requirement, and a majority of the coursework must be completed before the student submits 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 in the Fall Quarter of the last year of residence. It is first approved by the Performance Council, then by the Graduate Committee.

M.F.A. Committee. The M.F.A. committee is made up of four members from the Music Department: two from the area of performance, one of whom is the student's applied instructor, and two from other academic disciplines within the Department. Following these guidelines, the student may propose the chair and the other members. Occasionally, faculty outside the Music Department may serve in lieu of one of the departmental members. M.F.A. candidates should have committees appointed at the beginning of their last year in residence.

Advancement to Candidacy: See Master of Arts section.

Time to Degree. For a full-time student with no deficiencies upon admission to graduate status the normal progress toward the degree is as follows:

(a) From graduate admission to completion of required courses: nine quarters.

(b) From graduate admission to award of degree: nine quarters (10 quarter maximum).

The Ph.D. Degree

For Major Fields and Admission Requirements, see "General Information Applicable to all Degrees" above.

Foreign Language Requirement. A reading knowledge of French and German is required in Systematic Musicology, Ethnomusicology, and Music Education; of French, German, and a choice of Italian, Latin or another language approved by the Council in Historical Musicology. In the field of Composition, two languages are required; one of which must be German or French; the other may be chosen from German, French, Latin, Italian, or Russian.

Course Requirements

A Ph.D. student may petition to his/her area council on the advice of his/her 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 as follows:

Historical Musicology: 200A, 201ABC, 210, 211, 250A or 250B, and five terms of 260A-260F. Students who have received the M.A. in Historical Musicology from UCLA will normally take a minimum of three terms of 260A-260F in the Ph.D. program. Students may complete their residence requirement by electing courses, upon the recommendation of the Graduate Adviser, from 200 level courses or 100 level courses listed under the general requirements for the M.A.

Systematic Musicology: 200A-200B, five terms of 272, and one term of 255, 269, 273, or 275. Students who have received the M.A. in Systematic Musicology from UCLA will normally take a minimum of two terms of 272 in the Ph.D. program. Students may complete their residence requirement by electing courses, upon the recommendation of the Graduate Adviser, from 200 level courses or 100 level courses listed under the general requirements for the M.A.

Ethnomusicology: 190A-190B, 200A-200B, and six seminars, at least three of which shall be 280; the others are to be chosen from 248, 253, 254A-254B, or 255. Students are also expected to complete two area studies courses. Parts of these requirements may be completed at the M.A. level. Students may complete their residence requirement by electing courses, upon the recommendation of the Graduate Adviser, from 200 level courses or 100 level courses listed under the general requirements for the M.A.

Composition: 200A, one from 251A-251D, six terms of 252 (252A, B, and C in sequence with the option of substituting 596A for 252C), and 266A or 266B. Students who have received the M.A. in Composition from UCLA will normally take a minimum of three terms of 252 in the Ph.D. program. Students who have received the M.A. in composition elsewhere will normally take two full cycles of 252A,B, and C in sequence with the option of substituting 596A for either or both 252Cs. Students may complete their residence requirement by electing courses, upon the recommendation of the Graduate Adviser, from 200 level courses or 100 level courses listed under the general requirements for the M.A.

Music Education: 185, 200A-200B, and five terms of 270A-270F. Students who have received the M.A. in Music Education from UCLA will normally take a minimum of three terms of

270A-270F in the Ph.D. program. Under advisement, two of the three terms of 270A-270F may be completed under special studies (596C). Students who wish to pursue the Ph.D. in Music Education with a minor in Ethnomusicology will be required to take 185, 190A-190B, 200A-200B, three terms of 270A-270F, and two courses from 141-143, 145-149, 152, 153A-153B-153C, or 281-288. Electives are to be selected from 140ABC, M180, M181, 187, 254AB, 255, and 280. Students may complete their residence requirement by electing courses, upon the recommendation of the Graduate Adviser, from 200 level courses or 100 level courses listed under the general requirements for the M.A.

Form I: The status of students in all fields of concentration is provisional subject to the departmental approval of the Form I Application (Notice of Intention to Proceed to Candidacy for the Ph.D. Degree). This form is normally filed at the end of the first year of residency, provided that all but one of the languages have been passed. The application may be secured from the Student Services Office and returned to same for processing. The application, which is reviewed by the Graduate Committee, the student's area council and by the full faculty, normally takes two to three months to be approved. Upon approval of the application and completion of the entire language requirement, the student may request that a guidance committee be appointed.

Guidance Committee: The guidance committee will assist the student in the preparation of the written and oral qualifying examinations. Students may suggest the membership. The committee is made up of five members in the Department, all in the professional ranks. The committee must include at least two members in the student's area of concentration, one of whom will guide the dissertation and be the chair of the doctoral committee. Other members are elected according to the examinations to be taken. The Graduate Committee will appoint one member to act as chair.

Written and Oral Qualifying Examinations. When the student and his/her committee feel he/she is ready to take the Qualifying Examinations, the student 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 will act as proctor for the tests. Normally the six written examinations (delineated below) are spread over a 2-week period but should be completed within three weeks. Should the student not pass one or more of the tests, repeats will be scheduled after consultation with the guidance committee and after a stipulated period of time. Upon successful completion of the written examinations, an Oral Qualifying Examination will be scheduled by the Apprentice Assistant.

In the fields of *Historical Musicology, Ethnomusicology,* and *Music Education,* the written examinations consist of the following: (a) history of musical styles in Western civilization (three hours); (b) analysis of form and style (three hours); (c) an examination to demonstrate a basic knowledge of music in non-Western cultures (two hours); and (d) a choice of one or more from: acoustics of music, aesthetics of music, psychology of music, and organology (two hours). Further written examinations totaling six hours are required in two areas: (1) Historical Musicology: one area to be selected from Ancient, Medieval, Renaissance, or Baroque music; the other area from Classic, Romantic, or 20th Century music; (2) Ethnomusicology: two areas to be selected from contrasting musical cultures; and (3) Music Education: two areas, one to encompass historical, philosophical, and psychological bases, the other to be selected from Music Education emphasizing elementary, secondary, or college-university levels. For the student in Music Education with a minor in Ethnomusicology, the second examination will relate the fields of Ethnomusicology and Music Education.

In the field of *Systematic Musicology,* the written examinations consist of the following: (a) history of musical styles in Western civilization (three hours); (b) analysis of form and style (three hours); (c) an examination to demonstrate a basic knowledge of music in non-Western cultures (two hours); (d) a general examination in Systematic Musicology (two hours); (e) two areas to be selected from acoustics, aesthetics, psychology of music, sociology of music, and organology (six hours).

In the field of *Composition,* the written examinations consist of: (a) composition of a short homophonic and short polyphonic piece (within a 24-hour period optionally either on or off campus); (b) general history of music (three hours); (c) analysis of form and style (three hours); (d) one or more of the following: acoustics, aesthetics, psychology of music or ethnomusicology (two hours); (e) 20th Century music (two hours); and (f) music theory from the medieval period to the present, with an optional emphasis on theoretical writings before or after 1700 (three hours).

Upon completion of the Written and Oral Qualifying Examinations, the student may submit the dissertation topic and request for a doctoral committee for approval. The dissertation topic is first approved by the student's area council; the topic and the composition of the doctoral committee are then taken up by the Graduate Committee.

Doctoral Committee. The committee is made up of five members, three from the Music Department and two from other departments on campus, all in the professional ranks. The three members from the Music Department include two in the student's area of concentration and one outside the area. *Note:* Only two members from the guidance committee can be continued on the doctoral committee.

The first meeting of the doctoral committee is concerned with the presentation and discussion of the dissertation topic.

Dissertation. In all fields but Composition, the dissertation will be an extended monograph. In the field of Composition, the dissertation will consist 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. Students are eligible to receive the optional Candidate in Philosophy degree upon advancement to candidacy for the Ph.D.

Advancement to candidacy is processed by the Graduate Division upon completion of the qualifying examinations and presentation of the dissertation topic to the doctoral committee.

In-Candidacy Fee Offset Grant Program: Students who begin graduate study at UCLA after September 1, 1979 will be mandatorily included in this program. Those students with graduate standing prior to September 1, 1979, have a choice of whether or not to join the program. Specific information may be obtained from the Student Services Office.

Final Oral Examination. A Final Oral Examination is required by the Department of Music. When the student is ready for the Final Oral Examination, he/she should notify the Student Services Office who will contact the committee members and arrange the meeting.

Time to Degree. For a full-time student with no deficiencies upon admission to graduate status, the normal progress toward the degree is as follows:

(a) From graduate admission to admission to the doctoral program: four quarters.

(b) From graduate admission to Written and Oral Qualifying Examinations: six quarters.

(c) From graduate admission to approval of dissertation prospectus: eight quarters.

(d) From advancement to candidacy to Final Oral Examination: seven quarters.

(e) From graduate admission to award of degree: 15 quarters.

Lower Division Courses

6GA-6GB. Graduate Review of Music History and Analysis.

8G. Graduate Piano Sight-Reading.

Upper Division Courses

185. Historical and Philosophical Foundations of Music Education.

190A-190B. Proseminar in Ethnomusicology.

Graduate Courses

200A. Research Methods and Bibliography. Three hours weekly. A survey of general bibliographic material in music. *Mr. D'Accone, Mr. Hudson*

200B. Research Methods and Bibliography. Three hours weekly. Prerequisite: course 200A. Guided writing, utilizing specific bibliography, in systematic musicology, ethnomusicology, and music education. *Mr. Draper, Mrs. Murray and staff.*

201A-201B-201C. Introductory Seminar in Historical Musicology. Lecture, three hours. Prerequisite: 201A is prerequisite to 201B; 201B 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 the beginning graduate student a unified background for the remainder of his studies and to employ his developing skills in research and bibliography.

210. Medieval Notation. Three hours weekly. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period. Mr. D'Accone

211. Renaissance Notation. Three hours weekly. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period. Mr. D'Accone

***1248. Seminar in Comparative Music Theory.** 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. Mr. Crossley-Holland

250A-250B. Seminar in the History of Music Theory. (Formerly numbered 250.) Prerequisite: course 200A. 250A is not prerequisite to 250B. 250A: Music Theory from Antiquity through Zarlino; 250B: Music Theory from Rameau to the present. Mrs. Gollner, Mr. Reaney

251A-251D. Seminar in Special Topics in Composition and Theory. Three hours weekly. May be repeated for credit. An intensive exploration of specialized aspects of composition. 251A. Orchestration; 251B. Specific media; 251C. Specific styles; 251D. Compositional Analysis. Mr. Des Marais, Mrs. Barkin

252A-252B-252C. Seminar in Composition. Three hours weekly. Prerequisites: courses 106B and 107C. 252A is prerequisite to 252B; 252B is prerequisite to 252C. May be repeated for credit. Course may be taken out of sequence only by consent of instructor. Mr. Travis

253. Seminar in Notation and Transcription in Ethnomusicology. Three hours weekly. Prerequisites: courses 140A-140B-140C, 190A-190B, or consent of instructor. Mr. Nketia

254A-254B. Seminar in Field and Laboratory Methods in Ethnomusicology. Prerequisites: courses 190A-190B 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. Three hours weekly. Prerequisites: courses 140A-140B-140C, 190A-190B, or consent of instructor. Mr. Crossley-Holland

256. Seminar in Musical Form. Three hours weekly. Prerequisites: courses 126A-126B-126C. The analysis of structural organizations in music. Mr. Tusler

***1257. Seminar in Music of the United States and Canada.** Three hours weekly. Prerequisite: course 130.

M258. Seminar in Folk Music. (Same as Folklore M258.) Three hours weekly. Prerequisite: consent of instructor. Mr. Porter

260A-260F. Seminar in Historical Musicology. (1 course each) Lecture, three hours. Prerequisites: courses 200A, 201A-201B-201C, and 210 or 211. Students may enroll in 210 or 211 concurrently. May be repeated for credit. 260A Medieval Music, 260B Renaissance, 260C Baroque, 260D Classical, 260E Romantic, 260F General Topics. Mr. Bradshaw, Mr. Hammond, Mr. Winter

261A-261F. Problems in Performance Practices. Three hours weekly. May be repeated for credit. 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. 261A. Medieval; 261B. Renaissance; 261C. Baroque; 261D. Classical; 261E. Romantic; 261F. Contemporary. Mr. Harman, Mr. Winter

266A-266B. Seminar in Music of the Twentieth Century. Three hours weekly. Prerequisites: courses 126A-126B-126C. Students who have received credit for 266 may take either 266A or 266B. 266A: Discussion and analysis of the major works of the 20th Century before World War II. Emphasis will be placed 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. Mr. Reale

269. Seminar in the History of European Instruments. Three hours weekly. Mr. Hammond

270A-270F. Seminar in Music Education. Three hours weekly. Prerequisite: consent of instructor. May be repeated for credit: 270A. Tests and Measurements; 270B. Non-Western Musics; 270C. Curriculum Innovations; 270D. Philosophical Problems; 270E. Historical Foundations; 270F. General Topics. Mrs. Murray, Miss Hooper

***1272. Seminar in Systematic Musicology.** Three hours weekly. Prerequisite: course 108 and consent of instructor. May be repeated for credit.

273. Seminar in the Acoustics of Music. Prerequisite: course 108 or consent of instructor. May be repeated once for credit. Mr. Knopoff

***1275. Seminar in Aesthetics of Music.** Three hours weekly. Prerequisite: course 187, or consent of instructor. May be repeated once for credit. Mr. Schwadron

***1276. Seminar in the Psychology of Music.** Three hours weekly. Prerequisites: course 184 or consent of instructor. May be repeated for credit. Selected topics in the psychology of music to include: recent findings in brain research, musical perception, learning, cognition, memory, therapy, affect, meaning, and measurement. Mrs. Murray

280. Seminar in Ethnomusicology. Three hours weekly. Prerequisite: courses 190A-190B and 200A-200B. May be repeated for credit. Ms. Heth, Mr. Crossley-Holland

281A-281B. Music of Indonesia. Three hours weekly. Prerequisite: consent of instructor. The 2000-year old cultural history of Indonesia will serve as a background for the materials of this course. During the first quarter emphasis will be on the music of related performing arts of Java, including an analytical and comparative concentration on music as well as exercises in the melodic writing of classical gending; a similar emphasis in the second quarter will be devoted to the music and performing arts of Bali. Concurrent participation in one of the Indonesian performance groups is required. Mr. Harrell

282. Music of Iran and other non-Arabic Speaking Communities. Three hours weekly. 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 is required. Mr. Racy

***1283. Music of Thailand.** Three hours weekly. Prerequisite: consent of instructor. A study of the traditional music of Thailand; historical background and intercultural influences, instruments and ensembles, theatrical and dance music, the music in its social context; analysis of forms and styles through examination of representative compositions, with practice in composing in basic styles. Concurrent participation in the Thailand performance group is required.

284. Music of the Arabic Speaking Near East. Three hours weekly. Prerequisite: consent of instructor. A comparative study of the music cultures of Arabic speaking Near Eastern communities with particular reference to pre-nineteenth century Arabic sources on music theory and aesthetics, and contemporary musical practice considered in respect of social contexts, musical genres, relationship between theory and practice, and trends. Mr. Racy

***1285. Music of Tibet.** Three hours weekly. 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. Mr. Crossley-Holland

286A-286B. Classical Music of India. Three hours weekly. Prerequisite: consent of instructor. A study of the history, theory and practice of North and South Indian classical music. The first quarter will be concerned primarily with music history and traditional theory, while the second quarter will involve analysis of present-day forms, styles, techniques, and musical instruments. Concurrent participation in the Indian performance group is required. Mr. Jairazbhoy

287. Seminar in African Music. Three hours weekly. Prerequisites: courses 140A-140B-140C, 143A-143B, 200A, and 200B. Intensive investigation of musical style, historical, social and cultural aspects of indigenous musical traditions and related art forms. Mr. Nketia

***1288. Seminar in North American Indian Music.** Three hours weekly. 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 will be placed on interrelationship between music and cultural context. The influence of Western music in acculturative contexts will also be discussed. Mr. Draper

Professional Courses

370. Music in General Education. (½ course) Two hours weekly. Prerequisite: acceptance into the teacher training program through the School of Education. All music students shall take Music 370 concurrently with Education courses 100, 112, 312, 315, and supervised teaching. May be repeated for credit up to six units. Critical discussions related to supervised teaching in progress. Miss Hooper, Mr. Anderson

460A-465. Graduate Instruction in Performance. Prerequisites: admission to the M.F.A. program. Individual instruction of one hour per week with performance laboratory at the discretion of the instructor. May be repeated for credit. Intensive study and preparation of musical literature in the area of specialization. Mr. Tzerko, Mr. Harmon and staff

Strings: 460A Violin, 460B Viola, 460C Cello, 460D String Bass, 460E Harp, 460F Classical Guitar, 460G Viola da gamba, 460K Lute. *Woodwinds:* 461A Flute, 461B Oboe, 461C Clarinet, 461D Bassoon, 461E Saxophone. *Brass:* 462A Trumpet, 462B French Horn, 462C Trombone, 462 Tuba. 463 *Percussion.* Keyboard: 464A Piano, 464B Organ, 464C Harpsichord, 465 *Voice.*

472. Master Class in Opera. Three hours weekly. Prerequisite: consent of instructor. Intensive study and preparation of opera literature. May be repeated for credit.

475. Master Class in Conducting. Three hours weekly. Prerequisite: consent of instructor. Intensive study and preparation of musical literature in the specialized field of conducting.

Individual Study and Research

596A. Directed Individual Studies in Orchestration and Composition. (½ to 1 course) May be repeated for credit. A maximum of one course (four units) may be applied for credit for the M.A. degree.

596B. Directed Individual Studies in Musicology. (½ to 1 course)

596C. Directed Individual Studies in Music Education. (½ to 1 course)

597. Preparation for the Comprehensive Examination for the Master's Degree or the Qualifying Examination for the Ph.D. (½ or 1 course)

598. Guidance of Master's Thesis or M.F.A. Final Project. (1 or 2 courses) M.A. candidates may apply 4 units toward degree requirements. M.F.A. candidates may apply 8 units toward degree requirements. May be repeated for credit.

599. Guidance of Doctoral Disseration. (1 or 2 courses)

Related Courses in Other Departments

Dance 154. Music as Dance Accompaniment.
206. Music for Dance.
Folklore M106. Anglo-American Folk Song.
M123B. Finnish Folksong and Ballad.
M243A. The Ballad.
M243B. Problems in Ballad Scholarship.

Near Eastern Languages and Cultures

(Office, 376 Kinsey Hall)

Amin Banani, Ph.D., *Professor of Persian and History.*
Arnold Band, Ph.D., *Professor of Hebrew.*
Andras Bodrogligeti, Ph.D., *Professor of Turkic and Iranian (Chair of the Department).*
Seeger A. Bonebakker, Ph.D., *Professor of Arabic.*
Giorgio Buccellati, Ph.D., *Professor of Ancient Near East and History.*
Herbert A. Davidson, Ph.D., *Professor of Hebrew.*
Avedis K. Sanjian, Ph.D., *Professor of Armenian.*
Hanns-Peter Schmidt, Ph.D., *Professor of Indo-Iranian.*
Stanislav Segert, Ph.D., *Professor of Biblical Studies and Northwest Semitics.*
Wolf Leslau, Docteur-ès-Lettres, *Emeritus Professor of Hebrew and Semitic Linguistics.*
Moshe Perimann, Ph.D., *Emeritus Professor of Arabic.*
Ismail Poonawala, Ph.D., *Professor of Arabic.*
Claude-France Audebert, Ph.D., *Associate Professor of Arabic.*
Elizabeth Carter, Ph.D., *Associate Professor of Near Eastern Archaeology.*
John Callender, Ph.D., *Associate Professor of Egyptology.*
Lev Hakak, Ph.D., *Associate Professor of Hebrew.*
Thomas Penchoen, Ph.D., *Associate Professor of Berber.*
Yona Sabar, Ph.D., *Associate Professor of Hebrew.*
Deborah Lipstadt, Ph.D., *Assistant Professor of Jewish Studies.*

•

Shimeon Brisman, *Lecturer in Hebrew.*
David L. Lieber, D.H.L., *Lecturer in Hebrew.*
Stanford Shaw, Ph.D., *Professor of History.*

The Master of Arts Degree

Admission Requirements. In addition to the regular University requirements, a bachelor's degree or its equivalent in the language area chosen for the degree, the Graduate Record Examination Aptitude Test (minimum score requirement 1500), and three letters of recommendation are required. Prospective students may write to: Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA.

Advising. Graduate Adviser: Andras Bodrogligeti, Chair, Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA.

Each graduate student is assigned a guidance committee of three faculty members whose interests are in the student's area of specialization. The Chair of the Department selects the committee and appoints one member to serve as chair of the committee and adviser.

An advising appointment is made for each new student at the beginning of his/her first quarter. During this appointment, the student and his/her adviser agree upon a study list and his/her future program. In each subsequent quarter it is the student's responsibility to discuss his/her plan for that quarter with his/her adviser and obtain approval of his/her study list. Petitions to alter this study list after it has been formulated must be approved by the Department Chair, who is the official Graduate Adviser for the Department. Departmental policy requires the signature of the Chair of the Department for approval of all other petitions as well.

Major Fields or Subdisciplines. Ancient Near Eastern Civilizations, Arabic, Armenian, Hebrew, Iranian, Semitics, Turkic.

The candidate may concentrate on either language or literature in his/her chosen field but will be required to do work in both. In the case of the Ancient Near Eastern field, the candidate may concentrate on a combination of both language and literature with Near Eastern archaeology.

Foreign Language Requirement. The candidate will be required to pass an examination in one major modern European language other than English by the end of the third quarter of residence. The choice of the language will be determined in consultation with his/her adviser. The student has the option of satisfying this requirement by one of the following methods: (1) Educational Testing Service (ETS) examination, (2) departmentally administered examination, (3) two years college level or equivalent in the language selected. It is strongly recommended that the student who intends to continue toward a Ph.D. degree acquire a knowledge of a second major European language other than English while still a candidate for the M.A. degree.

Course Requirements

Departmental General Requirements. A minimum of nine upper division and graduate level courses, of which at least six courses must be on the graduate level. All candidates will be required to take one quarter of Near Eastern Languages 200 (Bibliography and Method).

Specific Requirements. The specific requirements for the M.A. degree in the several areas of specialization are as follows: The candidate in Ancient Near Eastern Civilizations will be required to study two ancient languages of the Ancient Near East (Ancient Egyptian, Akkadian, or Hebrew), and the history and archaeology of the related area. The major area of concentration may be either the linguistic, literary, or archaeological aspect of the discipline. The candidate in Hebrew will be required to study Hebrew and another Semitic language; in Semitics, three Semitic languages; in Turkish, two Turkic languages, and in Arabic, Armenian and Iranian, one other related Near Eastern Language in addition to his/her major language area.

Comprehensive Examination Plan. Upon completion of his/her course requirements and foreign language examination, the candidate will be required to take a written Comprehensive Final Examination in both his/her major and related fields administered by his/her guidance committee. The guidance committee of three faculty members is appointed by the Department Chair. A student may be reexamined a second time. A committee is appointed for each student, in the quarter in which the degree will be awarded.

Examinations are offered whenever the student is ready to take them.

Time to Degree. Average time from graduate admission to conferral of the degree: six quarters.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	2-8	Letter	3 times (12 units)

Number of 500 series quarter units which may apply toward the total course requirement: 12 units (596).

Toward the minimum graduate course requirement: 8 units (596).

Disqualification. The specific conditions which may lead to termination are: (1) terminal master's degree (recommendation from the student's master's committee), (2) scholarship (critical recommendation from the Graduate Committee), (3) failure to make normal progress toward the degree (recommendations from the Department Section in the student's specialization).

In all cases, the student's personal and academic progress are discussed in depth by the Department Section concerned with making the recommendation. A recommendation for termination is forwarded to the Department Chair for final review and decision. If termination is upheld, the Chair notifies the student in writing.

Appeals. Should the student wish to appeal such a decision, he/she should submit a letter to the Chair stating his/her reasons and the Chair will transmit it to the Department Section for consideration.

The Ph.D. Degree

Admission Requirements. In addition to the regular University requirements, a M.A. or its equivalent in the applicant's field, the Graduate Record Examination (GRE) Aptitude Test

(minimum scores requirement: 1500), and three letters of recommendation are required. Prospective students may write to: Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA.

The Department does not have an application form in addition to the one used by Graduate Admissions.

Completion of the master's degree in his/her field is required. The GRE is required. The M.A. program need not have been completed at UCLA.

Advising. Graduate Adviser: Andras Bodrogligeti, Chair, Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA.

All graduate students are assigned a guidance committee of three faculty members whose interests are in the student's area of specialization. The Chair of the Department selects the committee and appoints one member to serve as chair of the committee and adviser.

An advising appointment is made for each new student at the beginning of his/her first quarter. During this appointment, the student and his/her adviser agree upon a study list and his/her future program. In each subsequent quarter, it is the student's responsibility to discuss his/her plan for that quarter with his/her adviser and obtain approval for his/her study list. Petitions to alter this study list after it has been formulated must be approved by the Department Chair who is the official Graduate Adviser for the Department. Departmental policy requires the signature of the Chair of the Department for approval of all other petitions as well. The guidance committee usually serves as the departmental members of the doctoral committee.

Major Fields or Subdisciplines. Ancient Near Eastern Civilizations, Arabic, Armenian, Hebrew, Iranian, Semitics, Turkic. The candidate may concentrate on either language or literature in his/her chosen field but will be required to do work in both. In all areas of specialization, the student's program of study will be devised in consultation with his/her adviser.

Foreign Language Examinations. Two modern major European languages other than English. 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 the student's interests.

The requirement is fulfilled by one of the following three options: (1) Passing the Educational Testing Service (ETS) examination, (2) Passing an examination administered by the Department with a minimum grade of "B", (3) Two years' college work in the language or the equivalent.

The student is expected to pass one of the two required European languages at the beginning of his/her first quarter in residence, and the second language not later than at the beginning of the fourth quarter.

Course Requirements. A candidate specializing in the languages of the Near East is expected to take the equivalent of one year of general linguistics and one year of grammar in his/her field of concentration (e.g., Semitics or Turkic). He/she is also required to achieve competence in three related languages within his/her field of concentration with particular emphasis on two major languages. It is mainly the structural mastery of the languages and familiarity with their development and their position within the appropriate family of languages that are required. The student is also advised to acquaint himself/herself with the historical, literary, religious, and social background of the various language areas of his/her interest.

A candidate specializing in the literatures of the Near East is required to achieve competence in two languages; his/her second language must be a literary language from the cultural area related to his/her first language (e.g., a Hebraist can choose Akkadian, Arabic, Aramaic or Yiddish; an Arabist can choose Persian or Turkish, and so on). The candidate will also be required to 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.

A candidate specializing in Ancient Near Eastern Civilization will be required to achieve competence in two ancient languages. His/her major area of concentration may be in either the linguistic, literary, or archaeological aspect of the discipline.

Written and Oral Qualifying Examinations. Before the Chair of the Department recommends the formation of a doctoral committee, all students must pass Written Qualifying Examinations.

The candidate in languages will be examined in three Near Eastern languages and the literary and historical background of at least two of them. The candidate in literature will be examined in the literatures written in two languages within the cultural area of his/her concentration and the historical and cultural background of these languages with emphasis on one of them. The candidate in Ancient Near Eastern Civilizations will be examined in two ancient languages and the history and archaeology of the major areas of the Ancient Near East.

Doctoral Committee. The regulations are synonymous with those of the Graduate Council.

Final Oral Examination Following Completion of the Dissertation. The Department does not require an oral defense of the dissertation except when deemed necessary by the candidate's doctoral committee.

Time to Degree (Average)

1) From graduate admission to admission to the doctoral program, it is not synonymous: 6 quarters.

2) From appointment of an adviser or Departmental Guidance Committee to completion of master's degree, if a requirement: 6 quarters.

3) From graduate admission to the Written and Oral Qualifying Examinations: 12 quarters.

4) From graduate admission to the approval of the dissertation prospectus: 10 quarters.

5) From approval of dissertation prospectus to the Oral Qualifying Examination: 2 quarters.

6) From graduate admission to the award of the degree: 18 quarters.

Candidate in Philosophy Degree. The Department of Near Eastern Languages and Cultures has been approved to grant this degree upon advancement to candidacy.

Disqualification. The specific conditions which may lead to termination are: (1) Scholarship (critical recommendation from the Graduate Committee), (2) Failure to make normal progress toward the degree (recommendation from the Department section). In all cases, the student's personal and academic progress are discussed in depth by the Department Section concerned with making the recommendation. A recommendation for termination is forwarded to the Department Chair for final review and decision. If termination is upheld, the Chair notifies the student in writing.

Appeals. Should the student wish to appeal such a decision, he/she should submit a letter to the Chair stating his/her reasons and the Chair will transmit it to the Department Section for consideration.

Ancient Near East

Graduate Courses

210. Late Egyptian. (Formerly numbered 122A-122B.) Lecture, three hours. Prerequisites: courses 121A-121B-121C and consent of instructor. Late Egyptian grammar and reading of both hieroglyphic and hieratic texts. The quarters in which this course is offered vary from year to year. Check with department. 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.** 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. Prerequisites: consent of instructor. Readings of texts from various Sumerian periods and literary genres; selected problems in linguistic or stylistic analysis and literary history.

250. Seminar in Ancient Mesopotamia. Prerequisite: consent of instructor. Selected topics on the political, social and intellectual history of ancient Mesopotamia. May be repeated for credit. Mr. Buccellati

250X. Seminar in Ancient Mesopotamia. (¼ course) Prerequisite: consent of instructor. Selected topics on the political, social and intellectual history of ancient Mesopotamia. May be repeated for credit. Ancient Near East 250X is a one unit course for students who participate regularly in class meetings without the homework required of students in the regular course, Ancient Near East 250.

260. Seminar in Ancient Near Eastern Archaeology. Lecture, two hours. Prerequisite: consent of instructor. May be repeated for credit.

261. Practical Field Archaeology. (½ to 2 courses) Two hours. Prerequisite: consent of instructor. Participating in archaeological excavations or other archaeological research in the Near East under supervision of the staff. May be repeated.
Mr. Buccellati, Miss 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 will work with objects in the Heeramanek Collection of the Los Angeles County Museum of Art. Miss Carter

272. Semitic Background of the New Testament. (Formerly numbered 172.) Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C, Semitics 130, Greek 1-2, 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

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Related Courses in Other Departments

Art 104. History of Ancient Egypt.

105. History of Ancient Mesopotamia and Syria.

193D. Religions of the Ancient Near East.

201. Topics in History.

Arabic

Graduate Courses

***5220A-220B-220C. Islamic Texts.** Lecture, two hours. Scripture and interpretation in Islam; traditional Scholarship; historical and literary problems of modern research; selections from various fields of Islamic thought. May be repeated for credit.
Mr. Poonawala

***2230A-230B-230C. Arabic Poetry.** Lecture, two hours. Prerequisite: consent of instructor. Readings in Arabic poetry from various periods. May be taken independently for credit. Mr. Bonebakker

***2240A-240B-240C. Arab Historians and Geographers.** Lecture, two hours. Readings from the works of the most outstanding Arab historians and geographers of the classical period of Islam.
Mr. Poonawala

***5250A-250B-250C. Seminar in Arabic Literature.** Two hours weekly. May be repeated for credit with consent of instructor. Mr. Bonebakker

***5260A-260B-260C. Introduction to Modern Arabic Dialects.** Lecture, three hours. Prerequisites: Arabic 103A-103B-103C or consent of instructor. Survey of partition and geographic distribution of Modern Arabic dialects; common structural features and contrasts with Classical Arabic; socio-linguistic evaluation of the Arabic diglossia; analysis of representative texts.

***5280. Structure of Classical Arabic.** Lecture, three hours. Prerequisites: Arabic 103A-103B-103C or consent of instructor. The patterning of Classical Arabic at the morpho-phonemic, morpho-logical, and morpho-syntactic structural levels; application of traditional, statistical, and generative methods to the synchronic investigation of structural features.

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Related Courses in Another Department

History 106A-106B. The Middle East.

204A-204B. Seminar in Near and Middle Eastern History.

Armenian

Graduate Courses

***2207. 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. Fifth Century). Lecture, three hours. Prerequisites: courses 131A-131B or equivalent. Readings of texts and discussion of literary genres; the course will concentrate on both original works and those translated from Greek and Syriac. Mr. Sanjian

250A-250B. Seminar in Armenian Literature. Three hours weekly. Prerequisite: consent of instructor. Selected topics from various periods of Armenian literature. May be repeated for credit. Mr. Sanjian

***2290. Seminar in Armenian Paleography.** Three hours weekly. Prerequisite: consent of instructor. Discussion of variety of Armenian scripts and training in the use of manuscripts. Mr. Sanjian

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)
Mr. Sanjian

597. Examination Preparation. (½ to 2 courses)
Mr. Sanjian

599. Dissertation Research and Preparation. (½ to 2 courses) Mr. Sanjian

Related Courses in Other Departments

History 112A-112B-112C. Armenian History.

113. The Caucasus Under Russian and Soviet Rule.

200S. Advanced Historiography: Armenian.

201S. Topics in History: Armenia and the Caucasus.

211A-211B. Seminar in Armenian History.

Indo-European Studies M150. Introduction to Indo-European Linguistics.

Berber

Related Courses in Other Departments

History 109A-109B. History of North Africa from the Moslem Conquest.

Linguistics 225M. Linguistic Structures: Berber.

Hebrew

Graduate Courses

***2210. 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. May be repeated for credit. Mr. Sabar

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. Three hours weekly. May be repeated for credit.
Mr. Davidson

231. Texts in Judaeo-Arabic. Prerequisites: a reading knowledge of Hebrew and Arabic. Reading of Philosophic Texts in Judaeo-Arabic. Mr. Davidson

***5241. 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

***2242. Studies in Modern Hebrew Poetry.** Studies in specific problems and trends in Hebrew poetry of the last two centuries. Mr. Band

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Iranian

Graduate Courses

***5211A-211B. Modern Iranian Dialects.** Lecture, four hours. Prerequisites: Linguistics 100 or equivalent and consent of instructor. A survey of the Northwestern and Southwestern Iranian languages, and their interaction with the non-Iranian languages of Iran. Discussion includes historical development, linguistic affinities and modern distribution. Material gathered in the field will supplement lectures. May be repeated for credit with the consent of instructor.

***2220A-220B. Classical Persian Texts.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. Study of selected classical Persian texts. May be taken independently for credit.
Mr. Bariani

***5221. Rumi the Mystic Poet of Islam.** Lecture, three hours. Prerequisites: course 220A or 220B or equivalent and consent of instructor. A study of the life and works of Rumi in the context of interaction of Sufism and poetic creativity. Mr. Banani

***7M222A-**8M222B. Vedic.** (Formerly numbered Indo-European Studies 222A-222B and same as Oriental Languages M222A-M222B.) Lecture, four hours. Prerequisites: a knowledge of Sanskrit equivalent to Oriental Languages 162, and consent of instructor. Characteristics of the Vedic dialect and readings in the Rig-Vedic hymns. M222B only may be repeated for credit. Mr. Schmidt

***7230A-**8230B. Old Iranian.** (Formerly numbered Indo-European Studies 230A-230B.) Lecture, four hours. Prerequisite: consent of instructor. Studies in the grammars and texts of Old Persian and Avestan. Comparative considerations. 230B only may be repeated for credit. Mr. Schmidt

****231A-231B. Middle Iranian.** (Formerly numbered Indo-European Studies 231A-231B.) Lecture, four hours. Prerequisite: consent of instructor. Studies in the grammars and the texts of such Middle Iranian languages as best serve the students' needs (e.g., Pahlavi, Sogdian, Sakian). 231B only may be repeated for credit. Mr. Schmidt

****250. Seminar in Classical Persian Literature.** Three hours weekly. Prerequisites: courses 103A-103B-103C and Iranian 199 or consent of instructor. May be repeated two times for credit. Mr. Banani

****251. Seminar in Contemporary Persian Literature.** Three hours weekly. Prerequisites: course 140 or equivalent and consent of instructor. Studies in specific problems and trends in Persian poetry and prose in the twentieth century. Mr. Banani

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research Preparation. (½ to 2 courses)

Related Courses in Other Departments

History 110A-110B-110C. Islamic Iran.

Oriental Languages 160. Elementary Sanskrit.

161. Intermediate Sanskrit.

162. Advanced Sanskrit.

Indo-European Studies 210. Indo-European Linguistics: Advanced Course.

260A-260B. Seminar in Indo-European Mythology.

280A-280B. Seminar in Indo-European Linguistics.

Linguistics 225U. Persian Phonology and Syntax.

226V. Persian Syntax. Prerequisite: course 225U.

Music 81L. Music of Persia.

Islamics

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

598. Thesis Research and Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Related Course in Another Department

History 107A-107B. Islamic Civilization.

Near Eastern Languages

Graduate Courses

200. Bibliography and Method of Near Eastern Languages and Literatures. Lecture, two hours. Prerequisite: consent of instructor. One quarter required for the M.A. in Near Eastern Languages and Literatures. 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. This course is equivalent to Linguistics 225.

****M241. Folklore and Mythology of the Near East.** (Same as Folklore M241.) Prerequisite: Folklore 101 or equivalent.

****290. Seminar in Paleography.** Three hours weekly. To provide the students with the ability to cope with varieties of manuscripts.

Individual Study and Research

501. Near Eastern Languages Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Semitics

Graduate Courses

201A-201B-201C. Old Ethiopic. Lecture, two hours. Grammar of Old Ethiopic and reading of texts.

202A-202B-202C. Readings in Old Ethiopic Literature. Lecture, two hours. Prerequisites: courses 201A-201B-201C.

209A-209B-209C. Comparative Study of the Ethiopian Languages. Lecture, two hours. Prerequisite: consent of instructor. Comparative study of the various Semitic Ethiopic languages: Geez, Tigrinya, Tigre, Amharic, Harari, Gurage, and Gafat.

****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. 215B only may be repeated for credit. Mr. Segert

****220A-220B. Ugaritic.** Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Study of the Ugaritic language and literature. 220B only 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.** Lecture, two hours. Prerequisite: consent of instructor. May be repeated for credit. Mr. Segert

240. Seminar in Akkadian Language. Two hours weekly. 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. (¼ course) 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. Semitics 240X is a one unit course for students who participate regularly in class meetings without producing the homework required of students in the regular course, Semitics 240. Mr. Buccellati

241. Seminar in Akkadian Literature. Two hours weekly. 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. (¼ course) 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. Semitics 241X is a one unit course for students who participate regularly in class meetings without producing the homework required of students in the regular course, Semitics 241. Mr. Buccellati

280A-280B-280C. Seminar in Comparative Semitics. Two hours weekly.

290A-290B-290C. Comparative Morphology of the Semitic Languages. Two hours weekly. Prerequisites: courses 280A-280B-280C or consent of instructor. Comparative study of the noun and verb of the various Semitic languages (Arabic, Hebrew, Ethiopic, Akkadian, and Aramaic). Mr. Leslau

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Turkic Languages

Graduate Courses

210A-210B-210C. Ottoman. Lecture, three hours. Prerequisites: 101A-101B-101C or 112A-112B-112C or 114A-114B-114C or consent of instructor. Introduction to Ottoman: descriptive grammar, Arabic and Persian elements in grammar and vocabulary. Reading and composition drills. Mr. West

****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: Turkic 101A-101B-101C 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: Turkic 180A-180B-180C and consent of instructor. Textual and linguistic analysis of Turk and Old Uygur documents: inscriptions, manichean and buddhist literary works. Given in alternate years; to be given 1978-1979. Mr. Bodrogligeti

****230A-230B-230C. A Historical and Comparative Survey of the Turkic Languages.** Lecture, three hours. Prerequisites: Turkic 180A-180B-180C. Extinct and living Turkic languages. The history of Turkic: developments in the phonemic, grammatical and lexical systems from the 8th to the 20th centuries. Structural analysis of the Turkic languages on a comparative basis. Mr. Bodrogligeti

****235A-235B. Middle Turkic: Karakhanid, Khorazmian, Mamlukkipchak and Old Anatolian.** Lecture, three hours. Prerequisites: Turkic 180A-180B-180C and consent of instructor. A survey of Middle-Turkic documents. Textual and linguistic analysis of Middle-Turkic texts from various literary genres. Given in alternate years; to be given 1978-1979. Mr. Bodrogligeti

240A-240B-240C. Islamic Texts in Ottoman. Lecture, three hours. Prerequisites: Turkic 210A-210B-210C or consent of instructor. A philological and linguistic survey of the basic Islamic source material written in the Ottoman literary language. Reading and discussion of Ottoman texts on Islamic topics. Mr. Bodrogligeti

250A-250B-250C. Islamic Texts in Chagatay. Lecture, three hours. Prerequisites: Turkic 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: Turkic 102B or equivalent and consent of instructor. Specific issues and trends in the development of Turkish literature from the middle of the 19th century to the present. Mr. West

****290A-290B. Seminar in Classical Turkic Literatures: Ottoman, Chagatay and Azeri.** Lecture, two hours. Prerequisites: Turkic 210 and/or 220 and 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

Individual Study and Research

596. Directed Individual Study. (½ to 2 courses)

597. Examination Preparation. (½ to 2 courses)

599. Dissertation Research and Preparation. (½ to 2 courses)

Related Course in Another Department

History 201A. History of the Eurasian Nomadic Empires.

Neuroscience (Interdepartmental)

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.

The Ph.D. Degree

Admission Requirements. 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: Neuroscience Office, 73-346 CHS, UCLA, Los Angeles, CA 90024, Phone: (213) 825-8153.

Advising. The Graduate Adviser for the Neuroscience Program is: Professor Samuel Eiduson, Neuroscience Office, 73-346 CHS, Campus.

Upon admission to the Neuroscience Program, each new student is assigned an administrative adviser. These advisers are selected by the Neuroscience Committee and are not future dissertation advisers, although they could, of course, serve in this capacity. Generally, later in the student's career, he/she will change advisers once the dissertation sponsor has been selected.

Quarterly evaluations are made of each student's academic progress. The overall assessment is made by the student's adviser and is reviewed by the Chair who reports to the Neuroscience Committee.

Each adviser meets with the student at least once every quarter. Advisers are required to approve all course enrollments every quarter, and to discuss the student's progress and any difficulties he/she might be having.

Major Fields or Subdisciplines. Biobehavioral Sciences; Neuroanatomy; Neurochemistry; Neurocybernetics and Communication; Neuroendocrinology; Neuroimmunology; Neuropathology; Neuropharmacology; Neurophysiology.

Foreign Language Requirement. The Neuroscience Program does not have a language requirement but does have a breadth requirement which can be satisfied by successfully completing one of the following:

a. By passing the Graduate School Foreign Language Test in one of the approved languages (French, German, or Russian). Any exceptions to the above must be approved by the Neuroscience Committee. Normally, a score of 500 is considered passing.

b. By completing one of the recommended series of Biomathematics computer courses.

(c) By completing an in-depth "minor" in an area related to the student's field: A minor is defined as at least 8 units of study beyond the introductory level.

No student will be advanced to candidacy who has not met the above-mentioned breadth requirement.

Course Requirements. Basic course requirements of the Neuroscience Program include: Anatomy 206A-D; Biological Chemistry 201A-B-C; Biology 166; Biology 171; Neuroscience 233; Neuroscience 254; Electives and lab rotations (as determined by the student and his/her adviser).

Substitutions to the basic requirements may be made depending upon the background of the individual and with the consent of the Graduate Adviser. It is recommended that, when possible, required core courses be completed within the 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 required course, Neuroscience 233.

Written and Oral Qualifying Examinations. A Written Qualifying Examination is required following completion of the core requirements. The objective of this examination is to test the student's basic knowledge, ability to relate knowledge in different Neuroscience areas, to locate and interpret literature and to evaluate the student's aptitude for applying research problems.

Following the successful completion of the Written Qualifying Examination, the student and his/her adviser choose the doctoral committee (see *Doctoral Committee*).

An Oral Qualifying Examination, administered by the doctoral committee, is normally taken after the Written Qualifying Examination and the breadth requirements have been completed.

Doctoral Committee. The student and his/her adviser choose a doctoral committee consisting of three "inside" members and two "outside" members. In addition, the members of the committee must represent at least three different disciplines of academic study. Approval of the doctoral committee by the Neuroscience Committee is required.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional with the student's doctoral committee. If the doctoral committee unanimously agrees and the Neuroscience Committee concurs, the Final Oral Examination may be waived.

Time to Degree. In general, overall progress toward the degree will be accomplished by completing a prequalifying program of 12 to 16 units in each of the six full quarters and by passing the Oral Qualifying Examination two years after entrance. The student is expected to pass the Written Qualifying Examination within three attempts. The approved normative time-to-degree is 18 quarters.

Disqualification. The specific conditions which may lead to termination prior to degree are:

a. Failure to obtain at least a "B" in all core courses.

b. Failure to pass the Written or Oral Qualifying Examinations.

c. Failure to maintain progress toward the degree.

Because of a student's failure in any of the above categories, and following discussions with both student and adviser, the entire Interdepartmental Neuroscience Committee may vote to terminate the student.

Appeals. The student may appeal in writing, to the entire Committee and at a meeting of the entire Committee, present additional or mitigating information. This presentation may be made in person or in writing at the discretion of the student.

Other Relevant Information

West Coast Regional Consortium in the Neurosciences. The students in our Neuroscience Ph.D. program are eligible to participate in the West Coast Regional Consortium in Neuroscience. The consortium is a cooperative association of neuroscience programs at 11 universities enabling predoctoral and postdoctoral students to undertake short-term laboratory work and research using facilities or techniques not available at their home institutions. It also assists faculty and advanced graduate students to travel to member universities to demonstrate specific techniques or methods which otherwise would not be available on those campuses. Students and faculty at the Brain Research Institute and other neuroscience programs at participating universities may thus have access to the best educational opportunities available in the western region.

Following the completion of the required courses of the Program, the student and his/her adviser choose from a rich variety of

courses available in the associated departments and selected with regard to the student's interest and direction of research.

Graduate Courses

200A-200B-200C. Clinical Concepts in the Neurosciences. (½ course each) Presents information concerning neurological and psychiatric disorders for students from basic science backgrounds. Mr. Walter

M201A-M201B-M201C. The Functional Organization of Behavior. (½ course each) (Same as Psychiatry M201A-M201B-M201C.) Prerequisites: consent of instructor; admission to M201B requires completion of M201A; admission to M201C requires completion of M201A-M201B. The course is divided into three quarters. The Fall Quarter is introductory and focuses on the development of behaviors within different species and the functional uses of behaviors. An evolutionary biological perspective is used as the framework for the Fall Quarter. The Winter Quarter focuses on research studies designed to take into account the functional behavior of animals. The Spring Quarter focuses on special questions of interest to students. Mr. McGuire

M204. Structure and Function of the Limbic System. (½ course) (Same as Neurology M204.) Lecture, two hours. Prerequisite: consent of instructor. Current knowledge of the mammalian limbic system will be 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 will be related to normal limbic system structure and functions. Mr. Babb

***1205. Brain-Behavioral Strategies for the Neurosciences. (¾ course)** Prerequisite: consent of instructor. Emphasis will be placed 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 will be discussed in terms of the neural challenges for the coping animal. Behavioral methods will be emphasized along with concurrent recording of neurophysiological data. This course is designed primarily to present practical behavioral techniques for the neuroscience students. Mr. McGuire

M206A-M206B. Neurosciences: The Introductory Course for Graduate Students. (1¼ courses, 1¾ courses) (Same as Anatomy M206A-M206B.) Two hours of lecture and two hours of lab per week in the Winter Quarter; five hours of lecture and two hours of lab per week in the Spring Quarter. Prerequisite: a course (or equivalent) in basic and/or general physiology such as Biology 171 or Physiology 101 or consent of instructor. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Introductory course in the basic principles of the nervous system for graduate students as a prerequisite to more advanced courses. Fundamental approaches to neuroanatomy (Winter Quarter), neurophysiology and the brain mechanisms for behavior (Spring Quarter) will be stressed. Mr. Scheibel and the Staff

233. Seminar in Neuroscience. (½ course) Topics of current importance will be presented for discussion. Subject matter will be announced.

254. Interdisciplinary Research Seminar. (½ course) Lectures and discussions concern many different disciplinary approaches to knowledge of brain function. The subject matter serves to broaden the experience of students studying in different fields other than that of the lecturer and offers new information in depth from students in fields closely related to the subject discussed.

***1256A-256B-256C. Survey of the Basic Neurological Sciences. (½ course 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.

259A-259B-259C. Neurophysiology of Behavior: The Fetus, Newborn, and Infant. (½ course each) An integrated review of neuroanatomic, neurophysiologic, and behavioral development of human and animal fetuses and infants. Behavior will be correlated with the development of the brain during this period of rapid change in both. Mr. Parmelee

M260. Fundamental Concepts of Neuroendocrinology. (Same as Anatomy M260.) Two hours of lecture and two of discussion per week in the Winter Quarter of odd-numbered calender years. Prerequisites: Biochemistry 101C, Anatomy 206A-206B, or consent of instructor. Basic concepts of neuroendocrine integration including analysis of the current literature and research techniques.

M261. Neuronal Circuit Analysis. (½ course) (Same as Anatomy M261.) Three hours of lecture or discussion per week offered during the Winter Quarter. Prerequisite: Anatomy 206A and 206B or equivalent. The course will be run in a seminar form with strong emphasis on specific reading assignments. It will present an integrated view of neuronal circuit analysis at an advanced level and examine the layout and performance of a variety of basic neuronal circuits serving different control functions. Mr. Schlag

Individual Study and Research

596. Directed Individual Study or Research. (½ to 3 courses) Prerequisite: consent of instructor. Mr. Eiduson

597. Preparation for the Doctoral Qualifying Examination. (½ to 3 courses) Prerequisite: consent of instructor. Mr. Eiduson

599. Dissertation Research for Ph.D. Candidates. (1 to 3 courses) For students requiring special instruction or time to work on dissertation. Mr. Eiduson

Nursing

(Office: 2-137 Louis Factor Building, Center for Health Sciences)

Mary E. Reres, R.N., M.P.N., Ed.D., *Dean and Professor of Nursing.*
Phyllis A. Putnam, R.N., Ph.D., *Associate Dean and Associate Professor of Nursing.*
Betty L. Chang, R.N., D.N.Sc., *Assistant Dean of Student Affairs and Associate Professor of Nursing.*
Charles E. Lewis, M.D., Sc.D., *Professor of Medicine/General Medicine and Health Services Research, Public Health, and Nursing.*
Sharon J. Reeder, R.N., Ph.D., *Professor of Nursing.*
Maria W. Seraydarian, Ph.D., *Professor of Nursing.*
Donna L. Vredevoe, Ph.D., *Professor of Nursing.*
Beatrice M. Dambacher, R.N., D.N.Sc., *Emeritus Professor of Nursing.*
Lulu Wolf Hassenplug, R.N., M.P.H., Sc.D., *Emeritus Professor of Nursing.*
Dorothy E. Johnson, R.N., M.P.H., *Emeritus Professor of Nursing.*
Harriet C. Moidel, R.N., M.A., *Emeritus Professor of Nursing.*
Agnes A. O'Leary, R.N., M.P.H., *Emeritus Professor of Nursing.*
Pamela J. Brink, R.N., Ph.D., *Associate Professor of Nursing and Anthropology.*
Irma D'Antonio, R.N., Ph.D., *Acting Associate Professor of Nursing.*
Sally A. Thomas, R.N., Ph.D., *Associate Professor of Nursing.*
Gwen Van Servellen, R.N., Ph.D., *Associate Professor of Nursing.*
Donna F. Ver Steeg, R.N., Ph.D., *Associate Professor of Nursing.*
Arleen B. Canfield, R.N., Ed.D., *Assistant Professor of Nursing.*
Barbara H. Davis, R.N., Ed.D., *Assistant Professor of Nursing.*
Kathleen Dracup, R.N., D.N.Sc., *Acting Assistant Professor of Nursing.*
Jacquelyn Flaskerud, R.N., Ph.D., *Assistant Professor of Nursing.*
Joy Graves, R.N., Ph.D., *Assistant Professor of Nursing.*
Bonnie Holaday, R.N., D.N.Sc., *Assistant Professor of Nursing.*
Maryalice Jordan-Marsh, R.N., Ph.D., *Assistant Professor of Nursing.*
Jean A. Kerr, R.N., Ph.D., *Assistant Professor of Nursing.*
Deborah Koniak, R.N., Ed.D., *Assistant Professor of Nursing.*
Susan Ludington, R.N., Ph.D., *Assistant Professor of Nursing.*
Elizabeth Poster, R.N., Ph.D., *Assistant Professor of Nursing.*
Juliet Tien, R.N., D.N.Sc., *Assistant Professor of Nursing.*
Margaret Topf, R.N., M.S., *Acting Assistant Professor of Nursing.*
Cecily L. Betz, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Eleanor Brazal, R.N., M.A., M.Ed., *Assistant Clinical Professor of Nursing.*
Randy Caine, R.N., M.S., *Assistant Clinical Professor of Nursing.*
Mary Canobbio, R.N., M.S., *Assistant Clinical Professor of Nursing.*
Anayis Derdiarian, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Marilyn Eisz, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Margaret Galler, R.N., M.S.N., *Assistant Clinical Professor of Nursing.*
Roberta Gerds, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Susan Griffith, R.N., M.S., *Assistant Clinical Professor of Nursing.*
Gerrie Kilburn, R.N., M.S.N., *Assistant Clinical Professor of Nursing.*
Jackline Knable, R.N., M.S., *Assistant Clinical Professor of Nursing.*
Ann Lewis, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Ellen M. Meier, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Jo Ellen Murata, R.N., M.P.H., *Assistant Clinical Professor of Nursing.*
Agnes F. Padernal, R.N., M.A., M.Ed., *Assistant Clinical Professor of Nursing.*
Christine Petze, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Linda Sarna, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Carolyn F. Troupe, R.N., M.N., *Assistant Clinical Professor of Nursing.*
Sheila Weibert, R.N., M.S., *Assistant Clinical Professor of Nursing.*
Genevieve Bahu, R.N., M.N., *Visiting Lecturer in Nursing.*
William Crawford, Ed.D., *Visiting Lecturer in Nursing.*
Terri Forshee, R.N., M.S.N., *Visiting Lecturer in Nursing.*
Mary Hoban, R.N., M.N., *Visiting Lecturer in Nursing.*
Celine Marsden, R.N., M.N., *Visiting Lecturer in Nursing.*
Brooke Randell, R.N., M.N., *Visiting Lecturer in Nursing.*
Cynthia Scalzi, R.N., Ph.D., *Visiting Lecturer in Nursing.*
Esther Seeley, R.N., M.N., *Adjunct Lecturer in Nursing.*
Evelyn Sobol, R.N., Ph.D., *Visiting Lecturer in Nursing.*
Jo Ann Wegmann, R.N., M.S.N., *Visiting Lecturer in Nursing.*

The School of Nursing offers graduate study leading to the degree Master of Nursing (M.N.). Graduates of this program contribute to

improved 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.

The Master of Nursing (M.N.) Degree

Admission Requirements

1. Graduation from a recognized college or university having an NLN accredited baccalaureate nursing program satisfactory to the School of Nursing, University of California, Los Angeles and satisfactory to the Graduate Division, Los Angeles. Students who have completed other curricula (e.g., students who have graduated from a foreign institution) may be required to enroll in certain undergraduate nursing courses which generally will not be accepted in fulfillment of the requirements for advanced degrees.

2. Status as a licensed registered nurse in the State of California. Prior to entry into any clinical practicum, evidence of current licensure as a registered nurse in the State of California is mandatory.

3. An upper division statistics course, or a lower division statistics course with content equivalent to Public Health 100A must be completed prior to entrance into the School of Nursing.

4. An upper division, research course equivalent to N193 must be completed prior to entrance into the School of Nursing.

5. Professional and/or academic competence in nursing attested through three letters of recommendation.

6. A scholarship record satisfactory to the Graduate Division, Los Angeles and to the School of Nursing, University of California.

Foreign Students. Foreign students are cautioned that written and verbal communication skills are basic to the practice of nursing. It is therefore essential that students read, write and speak English well. Foreign applicants from countries in which English is not the first language and medium of instruction, whether licensed Registered Nurses in the United States or not, are required to take the Test of English as a Foreign Language Examination (TOEFL) and to attain a score of 550 or above on that examination. All foreign applicants, regardless of Registered Nurse licensure in the United States, and regardless of their first language, are required to take and pass the Committee on Graduate of Foreign Nursing Schools Examination (CGFNS).

Application Procedure. Prospective students interested in the Master of Nursing program, must file two applications: (1) Application for Admission to Graduate Status, and (2) Application for Admission to Graduate Study in the School of Nursing. The Application for Admission to Graduate Study in the School of Nursing can be obtained through the Student Affairs Office, School of Nursing, Louis Factor Building, Los Angeles, CA 90024. Application deadlines are as follows:

Quarter	Deadline
Fall	December 30
Spring	December 30

The application to the School of Nursing is free and must be returned to the School of Nursing directly. Please refer to the *ADMISSIONS* section of this catalog for information on the Admission to Graduate Status forms.

Advising. The School of Nursing gives direction to interested potential applicants through monthly open counseling sessions. Applicants may call the Student Affairs Office, (213) 825-7181, for dates and places of these sessions.

Upon admission to the School, each student is assigned a faculty adviser who has the responsibility to aid the student in planning a total program. Student and adviser together identify academic and personal needs and match them with School and University resources available in order to maximize the student's ability to reach educational and professional goals.

Transcripts and grade reports are reviewed quarterly. Evaluations of performance in clinical coursework are written at the end of the quarter and placed in the student's folder. The student is requested to read and sign the evaluation. Individual instructors are encouraged to contact the adviser of the student if they feel the student needs guidance in any academic endeavor. Signed records of all interviews are kept on counseling forms in the student's file.

If a student has academic difficulties, his/her record is reviewed by the adviser and the Assistant Dean of Student Affairs who meets with the student to determine guidance and recommendations. This meeting is also recorded in the counseling notes of the student's folder.

Major Fields. The School of Nursing offers graduate studies in the following areas:

- Community Mental Health
  - Psychiatric Nursing
  - Community Mental Health
  - Liaison Nurse
  - Mental Health Ethnic Specialist
- Gerontology
  - Clinical Specialist
  - Nurse Practitioner
- Maternal Child Health
  - Maternity
  - Pediatrics
- Medical-Surgical Nursing
  - General
  - Cardiovascular
  - Oncology
  - Respiratory
- Nursing Administration
- Primary Ambulatory Care
  - Adult
  - Family
  - Occupational Health
  - Pediatrics
  - Women's Health

Students may choose to add preparation in education or administration to their clinical requirement.

Degree and Course Requirements

Degree Requirements

1. A minimum of 10 courses (40 units) in the 100, 200, 400 and 500 series; eight of these 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.

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 in full time (8 units/quarter) is required for academic residence.

4. A Comprehensive Examination or a thesis is required.

Required Courses. The candidate for the M.N. degree must successfully complete a minimum of one course from each of the following areas:

1. Research in Nursing (204).

2. Nursing Theory (203, 210, 211, 212, 221, 222, 223, 224, 225, M217).

3. Cultural Diversity course (158, 196, 250, 251 or PH M283G).

4. Clinical Practice (401, 402A-B, 414, 415, 416, 417, 421A-B-C to 429A-B-C, 440A-B, 441A-B).

Additional course requirements vary according to specialty area listed below.

Community Mental Health Specialty. The primary intent of this specialization is the preparation of clinicians who can function in leadership roles in mental health settings. Students may elect additional preparation as consultants or Liaison Nurses (mental health consultants in general health care settings). This specialty requires a total of 10 to 17½ courses:

Psychiatric: 204, one Theory course, one Cultural Diversity course, 405, 424A, B, C; one elective course.

Community Mental Health: 204, one Theory course, one Cultural Diversity course, 405, 424A, B, 440A, B, 441A, B.

Liaison Nursing: 204, one Theory course, one Cultural Diversity course, 403, 405, 424A, B, 440A, B, 442.

Mental Health Ethnic Specialist: 204, one theory course, 260, 403, 405, 424A,B, 440A,B, 441A,B, five cognate courses, a seminar in Cultural Concepts.

Gerontological Nursing Specialty. The Gerontology Nursing specialty is designed to develop basic knowledge and skills providing multifaceted care that is required for the maintenance of health in the elderly. Goals of care include the retardation of decline and the promotion of remaining assets in health and illness.

Clinical Specialist option: Clinical nursing in this option is organized around the concept of stress and alleviation of its effects in the lives of the elderly in both health and illness. This option requires a total of 15 courses including: 204, 221, one Cultural Diversity course, 425A-B-C, 403, 6 elective courses chosen with faculty adviser.

Nurse Practitioner option: The nurse practitioner option of the gerontology nursing specialty program focuses on the knowledge and skills needed to develop competent practitioners, who will be prepared to provide primary health care to aged clients in ambulatory and long-term care facilities, at home, and in alternative settings.

This option requires a total of 15½ courses including: 204, 221, one Cultural Diversity course, 402A-B, 264, 425A-B, 429A-B-C.

Maternity Clinical Nursing Specialty. The primary goal of this specialty is to augment, expand, and refine knowledge and basic preparation in clinical expertise in giving care to the childbearing family in all phases of the reproductive cycle. The program focuses on the nursing process, patient and colleague teaching, and the development of leadership and research skills in the area of clinical practice. This specialty is one option in the Master of Nursing degree program and may be taken in conjunction with another clinical specialty of the student's choice. This specialty requires a total of 10 courses: 204, 203, one Cultural Diversity course, 212, 223, 422A, B, 422C or two functional elective courses are also required.

Medical-Surgical Nursing Specialty. The primary goal of this specialty is to develop highly skilled clinical nurse specialists in selected areas of Medical-Surgical Nursing in one or more of the following subspecialties:

Cardiovascular Subspecialty. The primary goal of this subspecialty within Medical-Surgical Nursing is to prepare cardiovascular clinical nurse specialists to meet an increasing demand for improved health services for patients with cardiovascular diseases. Several years of experience in acute coronary care settings (medical and/or surgical) and/or cardiac rehabilitation is highly recommended before entrance into this subspecialty. This subspecialty requires a total of 10 courses: 204, 211, one Cultural Diversity course, 423A, B, C, 415.

General Medical-Surgical Subspecialty. The primary goal of this subspecialty is to prepare nurses to become 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). At least two years of prior experience in medical-surgical nursing is highly recommended. This subspecialty requires a total of 10 courses: 204, one Theory course, one Cultural Diversity course, 423A, B, C, one elective course, and one course from the following — 203, 401 or 403.

Oncology Subspecialty. 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 subspecialty requires a total of 11 courses: 204, 203, one Cultural Diversity course, 423A, B, C, 401, 416, 417.

Respiratory Subspecialty. The primary goal of this medical-surgical subspecialty is to prepare respiratory clinical nurse specialists to meet the increasing demand for improved health services to patients with pulmonary diseases. Several years of prior experience in respiratory nursing, critical care, or rehabilitation are highly recommended. This subspecialty requires a total of 10½ courses: 204, 210, one Cultural Diversity course, 423A, B, C, 414, 415.

Nursing Administration Elective. The major objective of the graduate program in nursing administration is to prepare middle and top-level nursing administrators. Students will learn to analyze the health needs of large groups of patients, organize and implement the delivery of nursing services to meet those needs in collaboration with other disciplines, evaluate the results of nursing care delivery, and take steps to adjust nursing practice as required.

The program in nursing administration requires six quarters of full-time study and a three-month summer administrative residency. Stipends are provided by the institutions in which the residency is done.

The program is part of the curriculum of the School of Nursing, leading to a Master of Nursing degree. In addition to the required courses in the School of Nursing, students in this program take courses in the School of Public Health's division of Health Services Management. It is suggested that nursing administration students select Medical-Surgical Nursing as their clinical specialization. This program requires a total of 15 courses: 204, one Nursing Theory course, one Cultural Diversity course, 423A, B, 478A, B, and five Health Services Management courses offered through the School of Public Health.

Pediatric Clinical Nursing Specialty. The primary goal of this specialty is the expansion of knowledge and clinical expertise needed by the professional nurse specialist in pediatric nursing. The following clinical options are available within the pediatric program: acutely ill child, ambulatory care, chronically ill child, developmental disabilities, and oncology.

The nursing process and a theoretical framework are utilized as a basis for clinical practice. The program also focuses on the components of the clinical specialist role: clinical practice, research, education, management, and consultation. This specialty requires a total of 10 courses: 204, 203, one Cultural Diversity course, 212, 223, 421A, B, 421C or two functional elective courses are also required.

Primary Ambulatory Care/Nurse Practioner Specialty. The Primary Ambulatory Care specialty courses focus on the knowledge and skills needed to develop competent nurse practitioners who will function in family, adult, women's and/or pediatric primary ambulatory health care settings. Within the framework of the population areas, the focus is upon the individual within the family context.

This specialty requires a total of 12 courses: 204, one Theory course, one Cultural Diversity course, 402A, B, 264, 429A, B, C.

Occupational Health Option for Adult Nurse Practitioners. Students in Primary Ambulatory Care may elect the Occupational Health option, integrating principles of occupational health assessment and care with primary ambulatory care of the adult. This practitioner evaluates the individual as seen within his/her work setting as well as within the family group. Primary focus and emphasis is placed on health status assessment, health promotion, illness/accident prevention and rehabilitation.

Students will meet requirements for preparation in occupational health nursing through combination of courses and experiences specific to the delivery of occupational health care services. This specialty requires a total of 14 courses; 204, 225, one Cultural Diversity course, 402A, B, 264, 429A, B, C, and occupational health courses chosen with faculty adviser.

Thesis Plan. Students who choose a thesis plan normally select a thesis committee by the beginning of the third quarter or following completion of N204 and N205A or B. The thesis committee is composed of three members. One member is normally selected from outside the School of Nursing. Thesis students are expected to complete the thesis within the normal five to six quarter time period. Completed theses should be filed approximately two weeks before the awarding of the degree.

Comprehensive Examination Plan. The Comprehensive Examination Committee is a subcommittee of the Curriculum Committee. There are five faculty members including the Chair; all members are appointed by the Dean.

The Comprehensive Examination is given in written form. The examination is scheduled

each quarter. Students are eligible to take the examination during the quarter in which they are advanced to candidacy. Students will be allowed to repeat the Comprehensive Examination, in its entirety or in part, twice. Students must complete all requirements for the degree within one calendar year after advancement to candidacy.

Time to Degree. Normal progress from graduate admission to conferral of degree is five to six quarters.

500 Series Course Limitations. A total of 8 units of 500 series courses may be applied toward the total course requirements for the degree. The School of Nursing uses Satisfactory/Unsatisfactory grading on all 500 series courses. The 500 series courses, 596, 597, and 598 all have unit value of 4 to 8 units, 597 may be repeated only once, while 596 and 598 have no limit on the number of times they may be repeated.

Disqualification and Appeal of Disqualification.

Specific conditions leading to termination:

A. Failure to maintain a grade point average of 3.0.

B. Grades of B− or lower in clinical courses regardless of overall grade point average.

C. Unprofessional or unethical conduct as a registered nurse.

Process of decision to recommend termination:

A. Written report of conduct to Assistant Dean of Student Affairs by faculty member, graduate adviser, clinical supervisor or other concerned person.

B. Consultation by Assistant Dean with student.

C. Consultation by Assistant Dean with Dean as appropriate.

D. Final decisions are made by the Assistant Dean except for matters other than failure to maintain academic standing. Such cases are sent for review by Associate Dean, Graduate Division, in consultation with the Assistant Dean for Student Affairs, School of Nursing, with the final decision being made at the Graduate Division level.

Graduate Courses

I. Research in Nursing, Nursing Theory, and Cultural Diversity

203. Theoretical Framework for Nursing Practice. Lecture, four hours. 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. Lecture, four hours. Prerequisite: course 193 or equivalent upper division basic research methodology course. This course focuses on complex research designs and analysis of multiple variables. Emphasis will be placed on techniques for control of variables, data analysis, and interpretation of results. The interrelationship of theoretical frameworks, design, sample selection, data collection instruments, and data analysis techniques will be analyzed in depth. Content will be discussed in terms of clinical nursing research problems. Ms. Vredevoe and Staff

205A. Qualitative Research Methods in Nursing. Lecture, four hours. Prerequisite: course 204. Emphasis is placed upon nursing research designs utilizing the field method approach, ethnomethodology, and/or inductive methods. Ms. Brink

205B. Quantitative Research Methods in Nursing. Lecture, four hours. Prerequisite: course 204. Emphasis is placed 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 will be stressed. 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 will be stressed. 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 their childbearing years. Selected problems are examined in depth. Pertinent variables affecting the family's definition of the situation, their resources, strategies for coping, and utilization of professional services are explored and their relevance for nursing practice is examined. Ms. Reeder

M217. Medical Anthropology. (Same as Anthropology M263.) Lecture, three hours. Prerequisite: course M158 or consent of instructor. Any of the topics covered in upper division course, M158, will be selected each quarter, for intensive literature review and independent projects. The course may be repeated for credit. Ms. Brink

221. Theoretical Frameworks for Developmental Problems, Middle and Later Years. Lecture, four hours. Aspects of life span development relevant to understanding health needs in middle and later years will be studied. Changes in biological, cognitive, and psychosocial processes will be explored and implications for prevention and rehabilitative care considered. Ms. Putnam

222. The Concept of Grief and Loss. Lecture, three hours; laboratory, two to four hours. Prerequisite: enrollment in a clinical nursing course or concurrent. This course will deal with the concepts and theories of grief and loss, with a particular emphasis on the loss of a significant other. There will also be 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. Eisz, Ms. Canobbio

223. Management of Development Problems, Early Years. Lecture, four hours. Study of selected human developmental theories, hypotheses, and concepts. Problems relevant to nursing are examined through the critique of pertinent literature. Ms. D'Antonio, Ms. Holaday

224. Problems in Patient Motivation. Lecture, four hours. The major purpose of this course will be an exploration of the phenomena which may occur when a person assumes the role of a sick patient. Ms. Thomas

225. Problems in Environmental Management. Lecture, four hours. The prevention and treatment of nursing problems related to conditions of the physical and social environment. Ms. Jordan-Marsh

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 will be debated by students utilizing an indepth literature review on the issue. Ms. Ver Steeg

250. Seminar: Nursing in Other Cultures. Lecture, four hours. Prerequisite: consent of instructor. Discussion of anthropological principles which affect nursing care in a particular cultural environment. Individual research projects based upon the medical problems found in such an environment and the projected nursing interventions relative to these findings. Ms. Brink

251. Nursing Care to Ethnic People of Color in the United States. Lecture, four hours. Prerequisites: Graduate Standing, course 196, or consent of instructor. Examines and evaluates selected theories from nursing, other sciences, and their application to the delivery of intra and transcultural nursing care. Emphasis is placed 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. (½ course) Seminar 2.5 hours; eight weeks. Prerequisites: course 424B and a minimum of two cultural diversity cognate courses; concurrent enrollment in 403; and consent of instructor. 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. (½ course) Seminar, two hours. Prerequisites: to be taken concurrently with 402A and/or 402B, or consent of instructor. Discussion of the concepts of team practice, inter- and intra-professional relationships, legal issues, and the socioeconomic aspects of primary care. To be graded S/U only. Ms. Ver Steeg

298. Respiratory and Cardiovascular Physiology as It Relates to Nursing Assessment. Lecture, four hours; discussion, one hour. Prerequisite: upper division course in human physiology, or consent of instructor. An advanced treatment of topics such as ventilation-perfusion relationship, regulation of respiration, molecular basis for muscle contraction, regulation of circulation and others, will be presented in lectures and discussion with emphasis on current research. Application of knowledge to nursing problems will be stressed. Ms. Sereydarian

II. Clinical Practice

401. Nursing Assessment and Intervention. Lecture, two hours; laboratory, four to eight hours. Prerequisite: course 203 or concurrent. 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 and practice, two hours. Prerequisites: satisfactory 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 are integrated in a systems approach. Ms. Meier, Ms. Troupe

403. Physical Assessment for the Clinical Specialist. (1 to 1½ courses) Lecture, four hours; optional seminars, two hours. Prerequisite: consent of instructor, not open to Primary Ambulatory Care majors. An introductory study of the basic techniques of history-taking and physical examination which are used by clinical specialists as part of the total nursing assessment process. Includes theory, demonstration, and practice of physical assessment methodology. Optional seminars provide content pertinent to selected specialty areas. Ms. Meier, Ms. Troupe

404. Comprehensive Group Theory. Lecture, two hours; laboratory, two hours. This course will offer an indepth study of group dynamics and group therapy, applicable to any health service area. It will focus on the study and application of group theory and practice relevant to nursing. The student will 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.

405. Assessment in Psychiatric Nursing. Lecture, two hours; laboratory, six to eight hours. A preparatory course for Advanced Clinical practice. The specific aim is a critical examination of the concepts and strategies which effect assessment of psychological behavior. Ms. Kerr, Ms. Tien

M410A-410B-410C. Nursing Care of the Developmentally Disabled. (Same as Psychiatry M472A-472B-472C.) Lecture, one and one-half hours; discussion, one hour; laboratory, eight hours. Prerequisite: enrollment in the Master's Program of the School of Nursing. Study of the handicapping conditions of childhood and their effects upon the child and his/her family. This course combines didactic material and supervised clinical experience. Focus is on prevention, systematic assessment, planning, implementation and evaluation of nursing care. During the final quarter, the student participates in the assessment, planning and delivery of health care to the developmentally disabled in the community.
Ms. Savino, Ms. Yoshioka

414. Current Perspectives in Respiratory and Cardiovascular Nursing. (½ course) Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Exploration of selected problems, trends and issues in respiratory and cardiovascular health care, with emphasis on their significance for the clinical nurse specialist. Ms. Forshee

415. Assessment in Respiratory and Cardiovascular Nursing. (½ to 1½ courses) Lecture, one to four hours; laboratory, four to eight hours. Prerequisites: course 210 or 211, and consent of instructor. 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, Ms. Forshee

416. Oncology and Treatment of Cancer. Lecture, two hours; discussion, one hour; laboratory, eight to ten 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 is stressed.
Ms. Sarna, Ms. Hoban, Ms. Wegmann

417. Systematic Approach to Oncologic Nursing. Lecture, two hours; discussion, two hours; laboratory, eight to ten hours. Prerequisites: consent of instructor, course 416. Nursing management of persons with various types of malignancies. The focus is on the assessment of special physical and psychosocial problems of patients with diagnoses of cancer in a specific site. The focus is also providing the student with theoretical and technical skills necessary for the interventions of these problems.
Ms. Sarna, Ms. Wegmann, Ms. Hoban

421A. Clinical Nursing Care of Children. Discussion, two hours; laboratory, ten hours. Prerequisites: one course in nursing theory and prior or concurrent enrollment in 203. This course focuses on 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. D'Antonio, Ms. Holaday

421B. Advanced Clinical Nursing Care of Children. (2 courses) Discussion, two hours; laboratory, twenty hours. Prerequisite: course 421A. This course focuses on the role of the clinical specialist in pediatric nursing with emphasis on the practitioner core of the role. The student identifies a selected patient population for whom she plans and implements the nursing process from assessment through evaluation. Content includes theoretical and practical issues related to the clinical specialist role.
Ms. D'Antonio, Ms. Holaday

421C. Clinical Specialization in Nursing Care of Children. (2 courses) Discussion, two hours; laboratory, twenty hours. Prerequisite: course 421B. The practitioner role is continued in this course to foster consolidation of knowledge and skills. Emphasis is placed on the consultation and staff development dimensions of the clinical nurse specialist role. This course is required for Pediatric Nursing Specialization. Ms. D'Antonio, Ms. Holaday

422A. Clinical Maternity Nursing. Discussion, two hours; laboratory, ten hours. Prerequisites: consent of instructor and one theory course. Emphasis is placed on developing skill in the utilization of the assessment, intervention, and evaluation phases of the nursing process. The assessment phase as it relates to the child-bearing family is stressed. A family-centered orientation is stressed and theoretical models for the study of the family and the development of nursing practice are examined and utilized in care giving. Pertinent variables affecting the delivery of care and utilization of health services for all segments of society are examined. Ms. Reeder

422B. Advanced Clinical Maternity Nursing. (2 courses) Discussion, two hours; laboratory, twenty hours. Prerequisite: course 422A. Knowledge and clinical expertise are refined and extended with content emphasis on high risk conditions and complications in the reproductive process. Utilization of the nursing process is continued with emphasis on the prescriptive, intervention, and evaluative phases of the process. Teaching, counseling skills, and collegial relationships with co-workers are stressed. The health beliefs, orientations, and health behavior of clients from various cultural backgrounds are further examined and evaluated. The delineation and evaluation of researchable clinical questions are emphasized. Ms. Reeder

422C. Clinical Specialization in Maternity Nursing. (2 courses) Discussion, two hours; laboratory, twenty hours. Prerequisite: course 422B. Clinical expertise is continued to be refined and extended in one or more areas of the high risk conditions and/or normal phenomena encountered during the reproductive process as they relate to the assessment, intervention, and evaluative phases of the nursing process. Coordination of care, patient and family education counseling, and consultative skills are particularly stressed. The delineation and development of researchable clinical questions are further refined.
Ms. Reeder

423A. Clinical Medical-Surgical Nursing. (½ to 1 course) Lecture, one hour; discussion, two hours; laboratory, up to ten hours. Prerequisites: course 204 (or concurrent) and one theory course; consent of instructor for non-Medical-Surgical Specialization students. An advanced course in the theory and practice of the nursing care of medical-surgical patients. The major emphasis is on the assessment and diagnosis within a conceptual framework for nursing practice. The assessment focuses on physiological and behavioral changes in health state. Students select a specific patient population for concentration in the course: 1) Oncology, 2) Cardiovascular, 3) Respiratory, 4) General Medical-Surgical. Non-Medical-Surgical Specialization students may enroll for 2 units with consent of instructor. Ms. Canfield and Staff

423B. Advanced Clinical Medical-Surgical Nursing. (½ to 2 courses) Lecture, one hour; discussion, two hours; laboratory, up to thirty hours. Prerequisites: course 423A and consent of instructor for non-Medical-Surgical Specialization students. Continued refinement of the nursing process and extension of professional knowledge and skills with a selected patient population. Emphasis is placed 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) Oncology, 2) Cardiovascular, 3) Respiratory, 4) General Medical-Surgical. Non Medical—Surgical Specialization students may enroll for 2 units with consent of instructor. Ms. Dracup and Staff

423C. Clinical Specialization in Medical-Surgical Nursing. (½ to 2 courses) Lecture, one hour; discussion, two hours; laboratory, up to thirty hours. Prerequisite: course 423B and consent of instructor for non-Medical-Surgical Specialization students. Examination and implementation of the clinical nurse specialist role with a specific patient population and/or setting. Emphasis is on the functional aspects of the role: practitioner, educator, consultant, researcher. This course is required for Medical-Surgical Specialization. Students select a specific patient population for concentration in the course: 1) Oncology, 2) Cardiovascular, 3) Respiratory, 4) General Medical-Surgical. Non-Medical-Surgical Specialization students may enroll for 2 units with consent of instructor.
Ms. Knable and Staff

424A. Clinical Psychiatric Nursing. Discussion, three hours; laboratory, eight to ten hours. Prerequisite: course 405, consent of instructor. Focus will be on the process of psychotherapy with specific emphasis on the knowledge and skills of assessment and diagnosis. Content will include theories and techniques of practice. Ms. Kerr, Ms. Tien

424B. Advanced Clinical Psychiatric Nursing. (2 courses) Discussion, three hours; laboratory, twenty hours. Prerequisites: course 424A, consent of instructor. Refinement and extension of the process of psychotherapy with emphasis on prevalent psychiatry health issues. Ms. Van Servellen

424C. Clinical Specialization in Psychiatric Nursing. (2 courses) Laboratory, twenty-four hours; seminar, two hours. Prerequisites: course 424B, consent of instructor. Supervised Internship. Choice of setting and population to be the student's option. Required for Psychiatry Nursing Specialization.
Ms. Van Servellen

425A. Clinical Gerontological Nursing. (1 to 2 courses) Discussion, three hours; laboratory, fifteen to thirty hours. Prerequisite: one course in nursing theory. Principles and practice of assessment of psychosocial variables in health problems of elderly. Emphasis placed on integrated understanding of multiple variable influences in total health.
Ms. Davis, Ms. Troupe

425B. Advanced Clinical Gerontological Nursing. (1 to 2 courses) Discussion, three hours; laboratory, fifteen to thirty hours. Prerequisite: course 425A. Application of knowledge and skills of psychosocial nursing intervention in rehabilitation of the chronically ill aged. Ms. Davis, Ms. Troupe

425C. Clinical Specialization in Gerontological Nursing. (2 courses) Discussion, three hours; laboratory, up to thirty hours. Prerequisite: course 425B. Extension and demonstration of competencies in planning and implementation of nursing programs in health problems of the elderly. Ms. Davis

429A-429B. Preceptorship in Primary Ambulatory Care Nursing. (2 courses each) Lecture, three hours; discussion, three hours; laboratory, minimum of sixteen hours. Prerequisites: courses 402A-402B; consent of instructor. Theory and clinical practice in nursing management and evaluation of health problems in a selected ambulatory population. Health maintenance is emphasized. Attention is given to the developmental and cognitive needs of clients in relation to family, social, and cultural structures.
Ms. Lewis, Ms. Petze

429C. Advanced Preceptorship in Primary Ambulatory Care Nursing. (2 courses) Discussion, three hours; laboratory, twenty-four hours. Prerequisites: courses 429A, 429B, consent of instructor. Advanced specialization in primary ambulatory care. Emphasis is placed upon the refinement and extension of assessment, management, and evaluation skills, family health care, and community health concepts. Clinical options include family practice or specialization in adult, pediatric, or women's health care.
Ms. Lewis, Ms. Petze

440A-440B. Clinical Specialization in Community Mental Health Consultation. Lecture, three hours; clinical, ten hours. Prerequisites: consent of instructor, course 424B, concurrent with 441A and 441B. The study and application of mental health consultation theory and practices relevant to community mental health nursing. The focus is on group consultation skills. The development of the nurse-consultant role in the interdisciplinary health team approach to mental health services. The course is a two-quarter, In-Progress sequence. Ms. Graves

441A-441B. Clinical Specialization in Community Organization. Discussion, three hours; clinical, ten hours. Prerequisites: consent of instructor, course 424B, concurrent with 440A and 440B. Course focuses on the process of community health assessment and program evaluation and planning for health services. Emphasis is placed on health advocacy, prevention of mental illness, and planned change concepts. The course is a two-quarter, In-Progress sequence. Ms. Flaskerud

442. Liaison Nursing. Lecture, three hours; laboratory, ten hours. Prerequisites: courses 403, 440A. Behavior of groups of individuals is studied from an intersystem framework. The student focuses on the interactions of the health care providers and clients in general hospitals, clinics, and community health agencies. Attention is paid to the variables influencing the health care providers' assessments and interventions concerning the clients' behavioral problem(s). This framework is 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. The inter-relatedness of such variables as human services, sociopolitical and cultural life-style factors of the system are examined. Ms. Graves

III. Functional Preparation

473. Generic Consultation. (1 to 2 courses) Discussion, three hours; laboratory, ten to twenty hours. Prerequisites: introductory and intermediate clinical practicums, and one course in group dynamics and process or the equivalent. The study and application of consultation theory and practice relevant to nursing. Emphasis will be placed on the refinement of knowledge and skills necessary to establish a nursing role as an interdependent clinical nursing consultant. The concepts presented in this course are based on those theories from the following areas: group dynamics, learning, communication, change and nursing process. Ms. Flaskerud, Ms. Graves

475. Human Relations in Administration. Lecture, four hours. A systematic study of the principles of human relations in administration with emphasis upon their application to the field of nursing.

478A-478B. Seminar in Nursing Administration. Discussion, four hours; laboratory, eight hours. Prerequisites: consent of instructor. In-depth discussion of key issues affecting nursing administration, e.g., classification of patients by nursing care need, impact of nursing registries on hospital nursing programs, certification of nurses for advanced clinical practice, quality assurance, legislative issues, emerging organizational forms for delivering nursing care, extended nursing roles. The course focuses on the integration of nursing and management theories for application in nursing service settings. Seminars are augmented by field visits to residency sites to complete data collection for projects. Ms. Scalzi

IV. Individual Study and Research

596. Directed Individual Studies for Graduate Students. (1 to 2 courses) Prerequisite: consent of instructor. Opportunity for graduate students in nursing to pursue special research interests. May be repeated for credit, but only one quarter course (4 quarter units) may be applied toward the Master of Nursing degree. Graded only on a S/U basis.

597. Individual Study for Comprehensive Examination. (1 to 2 courses) Individual study for comprehensive examination. May be repeated for credit, but only one quarter course (4 quarter units) may be applied toward the Master of Nursing degree. Graded only on a S/U basis.

598. Research for Thesis. (1 to 2 courses) Prerequisite: consent of instructor. May be repeated for credit, but only one quarter course (4 quarter units) may be applied toward the Master of Nursing degree. Graded only on a S/U basis.

Oral Biology

(Office, 63-090 Health Sciences Center)

Thomas K. Barber, D.D.S., M.S., *Professor of Pediatric Dentistry and Pediatrics.*
George W. Bernard, D.D.S., Ph.D., *Professor of Oral Biology and Anatomy.*
Angelo A. Caputo, M.S., Ph.D., *Professor of Biomaterials Science.*
Fermin A. Carranza, Jr., D.D.S., Dr. Odont., *Professor of Periodontics.*
Spiro J. Chaconas, D.D.S., M.S., *Professor of Dentistry.*
Andrew D. Dixon, D.D.S., M.D.S., Ph.D., D.Sc., *Professor of Dentistry.*
Louis J. Goldberg, D.D.S., Ph.D., *Professor of Dentistry (Oral Biology) and Anatomy (Chair of the Oral Biology Section).*
Douglas Junge, Ph.D., *Professor of Oral Biology and Physiology.*
E. Barrie Kenney, D.D.S., M.S., *Professor of Periodontics.*
Carol M. Newton, M.D., Ph.D., *Professor of Biomathematics.*
Bernard G. Sarnat, M.D., M.S., D.D.S., *Adjunct Professor of Oral Biology and Plastic Surgery.*
Max H. Schoen, D.D.S., M.P.H., Ph.D., *Professor of Public and Preventive Dentistry.*
G. Douglas Silva, F.D.S., M.R.C.S., *Professor of Oral Medicine and Medicine.*
Normal S. Simmons, D.M.D., Ph.D., *Professor of Oral Medicine and Research Biochemist.*
Alfred Wienstock, D.D.S., Ph.D., *Professor of Periodontics and Anatomy.*
Fred Herzberg, D.D.S., M.S., *Emeritus Professor of Oral Biology and Research Anatomist.*
John Beumer, III, D.D.S., M.S., *Associate Professor of Restorative Dentistry.*
Colin K. Franker, Ph.D., *Professor of Oral Biology.*
Wyatt R. Hume, B.D.S., B.Sc.Dent., Ph.D., *Associate Professor of Oral Biology.*
Michael G. Newman, D.D.S., *Associate Professor of Periodontics.*
George R. Riviere, D.D.S., M.S., Ph.D., *Associate Professor of Pediatric Dentistry and Oral Biology.*
William K. Solberg, D.D.S., M.S.D., *Associate Professor Restorative Dentistry.*
Stuart C. White, D.D.S., Ph.D., *Associate Professor of Oral Radiology.*
Gerald C. Brundo, D.D.S., M.A., *Assistant Professor of Restorative Dentistry.*
Russell Christensen, D.D.S., M.S., *Assistant Professor of Oral Diagnosis.*
Glenn Clark, D.D.S., M.S., *Assistant Professor of Gnathology.*
Joseph P. Cooney, D.D.S., M.S., *Assistant Professor of Restorative Dentistry.*
Donald F. Duperon, D.D.S., M.Sc., *Assistant Professor of Pediatric Dentistry and Pediatrics.*
Jay Gershen, D.D.S., Ph.D., *Assistant Professor of Pediatric Dentistry and Public Health.*
Lawrence Wolinsky, D.D.S., Ph.D., *Assistant Professor of Oral Biology.*

•

Larry S. Luke, D.D.S., M.S., *Assistant Clinical Professor of Dentistry and Pediatrics.*
Robert P. Thye, D.M.D., M.S., *Clinical Professor of Restorative Dentistry.*

Master of Science Degree

Admission Requirements. 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. Applicants with foreign degrees will be considered individually upon an evaluation of their curriculum and training. The Graduate Record Examination and the Dental Aptitude Test are not required, but may be submitted if the student desires to do so. An English language proficiency exam will be required of foreign students. Three letters of recommendation are required as part of the admissions packet. These letters should be sent to the Graduate Adviser in the Section of Oral Biology, School of Dentistry, UCLA. For further information contact: Graduate Adviser, Section of Oral Biology, School of Dentistry, University of California, Los Angeles, California 90024.

Advising. Students are required to select a sponsor who will direct their research programs. This sponsor should be within the School of Dentistry, but may also be selected from outside the School. If the latter is the case, there must also be a cosponsor from the School of Dentistry. The Graduate Adviser of the Oral Biology program keeps records of the students' progress and performance in the program. When a student appears to be having academic problems he/she is contacted by the Graduate Adviser for counseling. To contact the Graduate Adviser write the Oral Biology Office, 63-090 CHS; School of Dentistry, UCLA, Los Angeles, California (213) 825-1955.

Major Fields or Subdisciplines. Areas of specialization or subdisciplines which may be followed by compliment or complete the degree requirements include: Anatomy, Biological Chemistry, Cell Biology and Virology, Immunology, Microbiology, Pharmacology and Physiology.

Course Requirements. The Oral Biology program requires a total number of nine courses, five of which must be at the graduate level. Flora of the Human Mouth, Oral Physiology, Secretory and Gastrointestinal Immunity, The Biochemistry of Saliva and Dental Caries, Brainstem Control of Rhythmical Movements, Biology of Bone, and Principles and Methods of Research are the program's seven required graduate core courses. These courses should be taken during the first year of graduate study.

There is one upper division course, Selected Biomathematical Topics for Researchers in Medicine and Biology, which is required for completion of the degree. The program also offers a course in Communicating Scientific Information to better prepare the student in the preparation of scientific writing and communication. This course is also required.

Thesis Plan. The master's thesis is intended to demonstrate the candidate's ability to design and carry out a research project, and analyze and present the resulting data. Publishable scientific results are thus not required although 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 shall direct the work of the thesis. A committee shall consist of at least four faculty members (including at least one member from the faculty of the Section of Oral Biology), recommended by the Graduate Adviser and the student's faculty sponsor, and appointed by the Dean of the Graduate Division. This committee shall pass upon the merits of the master's thesis.

Thesis Proposal. Approximately on completion of course requirements, the candidate will prepare and send to his/her graduate committee a brief description of the proposed research project. This may also be done before completion of course requirements, if the student is ready. The proposal will be two or three pages in length, setting forth the general background for the project, and outlining the experiments to be performed and the expected method of analyzing the results. The committee will then discuss the proposal with the candidate and make suggestions.

Thesis. The thesis will be prepared in accordance with the requirements of the Graduate Division and the University Archivist. Some guidelines for the Oral Biology master's thesis in particular are: The length will be typically thirty to fifty pages, doublespaced. An *Abstract* describes the work carried out in terms of specific experiments and general conclusions. The *Introduction* and *Background* states the problem in the context of previous work in the field, and reviews the related literature, with perhaps fifty or less references. The *Materials and Methods* section describes techniques and procedures used, in sufficient detail to permit another researcher to repeat the experiments. *Results* contains data collected in the course of experiments, presented in a logical sequence. This should include text, graphs, tables, or photographs, but a minimum of literature review of "splitting of fine hairs." *Discussion* relates the work to other studies in the field, explains inconsistent results or unexpected findings, and perhaps suggests future experiments.

The thesis should be prepared mainly in consultation with the sponsor, although other committee members will be available for assistance. At least two weeks should be allowed between completion of thesis and termination from the program, to allow committee members to read and comment on the manuscript. Caution is advised about unexpected delays which often occur with preparation of illustrations, typing and proofreading, and making final revisions and corrections.

Time to Degree. The master's degree in Oral Biology is a two-year program. The student can finish his/her required course in three quarters and begin on the research in the Summer Quarter. The student should be finished by the following summer. If a student comes into the program with a research project and knows exactly who he/she wants to collaborate with, it may be possible to complete the program in five quarters.

500 Series Course Limitations. Direct Individual Study or Research OB596 and Thesis Research and Preparation OB598 are required 500 series courses. The student is eligible to take two to eight units at a time on a Satisfactory(S)/Unsatisfactory(U) grading basis as many times as is needed. Only eight units of the 500 series may be applied toward the total course requirement of which four of those units may be applied toward the minimum graduate course requirement.

Disqualification. Recommendations for termination of students on probation, or students admitted provisionally, or others who are not making sufficient progress toward the degree may be made in the following way: the Program Chair may recommend termination of a student by submitting a written statement to the Department Chair (who is also Dean, School of Dentistry) setting forth the reasons for the recommendation. The student will be asked to withdraw from the program for cause.

Appeals. Such students may petition, stating in writing his/her basis for the appeal of disqualification, to have their situation reviewed by a faculty Review Committee. In all cases the Review Committee will consist of three members. One member will be the student's principal adviser, one will be appointed by the Department Chair, and one by the student. If the student does not have a principal adviser, the Department Chair will appoint two members.

The Committee will review the formal record of the student, and in every case, conduct a personal interview with the student. Its recommendations will be communicated in writing to the Department Chair with a copy to the student and the Program Chair. These recommendations should be specific, including (but not limited to) recommendation for leave of absence for a specified period of time for the purpose of removing incomplete grades, or reviewing academic goals, etc.; continuance as a registered student in the program for a specified period of time with expectations of the committee clearly stated; or termination. Leaves of absence will be granted to students on academic probation only by special petition to the Dean of the Graduate Division.

Other Relevant Information. The master'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 Graduate Admissions.

Graduate Courses

202. Principles and Methods of Research. One hour lecture and three hours of lab per week. This course is designed to familiarize the student with the experimental method and its application to basic and applied research. It will include experimental method and design and interpretation of data. The student will be exposed to research instrumentation and the advantages and limitations of various investigative tools. Mr. Junge and the Staff

M203. Oral Embryology. (Same as Anatomy M203.) Four hours per week in the Spring Quarter. A course of lectures and laboratory instruction, the development and historilogical structure of the facial region and the oral and perioval organs and tissues.
Mr. Bernard and the Staff

204. Flora of the Human Mouth. (½ course) Two hours lecture and discussion per week. Required for Oral Biology masters students. An examination of the major bacterial, fungal and viral residents of the oral cavity with emphasis on determinants of habitat and other ecologically relevant topics. Host-mediated parameters which regulate various aspects of the oral ecosystem are also emphasized, e.g. salivary constituents and mechanisms leading to specific surface interactions. Offered Spring Quarter.
Mr. C.K. Franker

M205. Oral Physiology. (Same as Physiology M203.) Lecture, one hour; discussion, one hour. The organ-level and cellular physiology of the following systems will be discussed, in a somewhat flexible framework: (1) Salivary glands, including the mechanisms of secretion, abnormalities such as Mikullcz-Sjogren 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 to be supplemented with audio-visual materials and many references from the literature. To be offered Fall Quarter. Mr. Junge

M206. Secretory and Gastrointestinal Immunity. (Same as Microbiology and Immunology M206.) Lecture, two hours. The anatomy and physiology of the oral cavity, the intestines, and the related lymphatic and blood vascular systems will be reviewed in reference to the immune system. The secretory and systemic immune systems will be discussed in detail with particular emphasis on the unique properties of SigA. The ability to process enteric antigens, to respond, and to regulate enteric immunity will be discussed in terms of recent experimental findings. The role that enteric immunity may play in diseases of the GI tract, such as dental caries and inflammatory bowel diseases will be presented. The class will meet for two hours one day per week. Students will participate in discussions following each lecture and will present seminars based on a review of the relevant scientific literature. 20 hours. To be offered Spring Quarter.
Mr. Riviere

207. Brainstem Control of Rhythmical Movements. Lecture, 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 brain stem reflexes, pattern generators and "voluntary" control centers. Mr. Goldberg

208. The Biochemistry of Saliva and Dental Caries (½ course) Lecture, two hours. This course will be organized into a seminar in which current research in the field of saliva biochemistry and its relationship to the development of dental caries will be discussed. Each student will be expected to present a current article for discussion. To be offered in the Winter Quarter. Mr. Wolinsky

212. Current Views on the Neuronal Control of Jaw Movement. (¼ course) This seminar involves discussion and evaluation of recent papers concerning motor control of the jaw. Mr. Goldberg

M214. Biology of Bone. (½ course) (Same as Anatomy M225.) Two hours of lecture and one hour of discussion per week in the Winter Quarter. Prerequisite: consent of instructor. Embryology of bone tissue; bone as an organ; growth and development of specific bones; biochemistry and physiology of bone; remodelling of bone; crystallography of hydroxyapatite; pathological calcifications; pathology of bone; mechanisms and lineage of a calcification; clinical correlations. Mr. Bernard

215. Genetics in Dentistry. (½ course) Two hours of lecture per week. This course includes molecular and cytologic basis of inheritance, human cytogenetics, mendelian genetics and polygenic modes of inheritance, inborn errors of metabolism, genetic diseases affecting the oral facial area, and recent advances, i.e., amnicentesis, linkage, and cell hybridization. Mr. Stewart

216. Biological Electron Microscopy in Dental Research. (¼ course) Prerequisite: consent of instructor. A review of the application of electron microscopy to hard and soft tissues of the oral-facial region. Emphasis given to oral health problems. Course content adapted to special interests of the participants. Mr. Dixon

218A. Oral Pathology. (¾ course) Two hours of lecture per week. This course encompasses the embryology, cell biology, histopathology, histophysiology, and symptomatology of oral pathologic condition of local or systemic origin. The course consists of lectures, demonstrations (laboratory tests), and microscopy dealing with the developmental, inflammatory, neoplastic, metabolic, degenerative diseases and physical injuries and healing of wounds.

223. Oral Immunopathology. (¼ course) Prerequisite: consent of instructor. This seminar will evaluate the involvement of immunological phenomena in the pathogenesis of oral diseases such as dental caries, periodontal disease, oral ulceration, and hypersensitivity reactions. Aberrations of the immune system which affect the oral cavity will also be discussed. Mr. Riviere

M224A-M224B. Structure and Chemistry of Connective Tissue. (½ course each) (Same as Anatomy M224A-M224B.) Two hours of discussion per week in the Fall and Winter Quarters. 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 collage, noncollagenous proteins and glycoproteins, and glycosaminoglycans (mucopolysaccharides). The possible roles of the cellular and non-cellular elements in the process of biological mineralization and correlation of biological processes to periodontal pathology. In-Progress grading. Mr. Weinstock

225. Gross Postnatal Craniofacial Growth and Development. (½ course) This seminar is 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 will present reviews and critiques of original articles. This will be followed by group discussion. Specific aspects of the following general topics on growth of bone and bones will be considered in detail: Historical review; modes of growth; general and craniofacial (mandible, midface, cranium) growth; methods of assessing; factors affecting; and conflicting hypotheses. The student will be encouraged to pursue his particular interest.

227. Dental Embryology and Histology. (¼ course) The student will be able to describe and interpret important stages in the development of the orofacial apparatus and histological features of its component tissues. The student will be able to critique scientific literature relevant to the course content and will analyze the current state of our knowledge about selected features of the orofacial apparatus which are of significance to the clinical dental specialist. Mr. Dixon

228. Dental Therapeutics. (½ course) Lecture, two hours. A course of lecture/seminar sessions considering details of specific herapeutic agents used by dentists. The compounds and preparation available within each class of agents will be described, their basic pharmacology reviewed, dosages and schedules of administration analyzed, and indications and contradictions for their use discussed. For each agent, possible adverse reactions and interactions with other drugs will be emphasized. Mr. Hume

M293. Major Concepts in Oncology. (Same as Cell Biology & Virology M293, Microbiology and Immunology M293 and Pathology M293.) Lecture, three hours. Prerequisite: Graduate Standing or consent of instructor. Course designed for graduate students contemplating research in oncology. Lecture. 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.

490. Profesalonal Writing for Dentistry. (½ course) Prerequisite: consent of instructor. Workshop in scholarly publication. Analysis of syntactic, rhetorical and stylistic features of scientific prose will help students see the relationship of language to abstract thought and of writing to research. Coordinates with OB 202, Principles and Methods of Research. Offered on a satisfactory/unsatisfactory (S/U) grade basis only. May be repeated once for credit. Mr. Bjork

Individual Study and Research

596. Directed Individual Study or Research. (½ to 1 course) Graded S/U.

598. Thesis Research and Preparation. (½ to 1 course) Graded S/U.

Oriental Languages

(Office, 222 Royce Hall)

Hartmut E. F. Scharfe, Ph.D., *Professor of Indic Studies (Chair of the Department).*
Ensho Ashikaga, M.Litt., Giko, *Emeritus Professor of Oriental Languages.*
Kenneth K. S. Chen, Ph.D., *Emeritus Professor of Oriental Languages.*
Kan Lao, B.A., Academician, *Emeritus Professor of Oriental Languages.*
Richard C. Rudolph, Ph.D., *Emeritus Professor of Oriental Languages.*
Ben Befu, Ph.D., *Associate Professor of Oriental Languages.*
Hung-hsiang Chou, Ph.D., *Associate Professor of Oriental Languages.*
Robert C. Epp, Ph.D., *Associate Professor of Oriental Languages.*
William R. LaFleur, Ph.D., *Associate Professor of Oriental Languages.*
E. Perry Link, Jr., Ph.D., *Associate Professor of Oriental Languages.*
Herbert E. Plutschow, Ph.D., *Associate Professor of Oriental Languages.*
Shirleen S. Wong, Ph.D., *Associate Professor of Oriental Languages.*
Richard E. Strassberg, Ph.D., *Assistant Professor of Oriental Languages.*

•

Y. C. Chu, M.A., *Lecturer in Chinese.*
Kuo-yi Pao (Unensečen), M.A., M.S., *Lecturer in Oriental Languages.*
Hanns-Peter Schmidt, Ph.D., *Professor of Indo-Iranian Studies.*

The Master of Arts Degree

Admission Requirements. Students seeking admission to graduate status in Oriental Languages are expected to meet, in addition to general University requirements, not only the minimum requirements for the undergraduate major, but in addition, a minimum of three courses in classical Chinese or Japanese at the upper division level. Students whose undergraduate preparation was not in the field of Oriental Languages will be admitted only if they can meet the departmental standards in linguistic competence and complete the minimum departmental requirements for the equivalent of a B.A. degree within the period of one year. Selection will be based on 1) prior scholastic performance (at the junior, senior and/or graduate levels), 2) recommendations by professors and others, 3) score on the Graduate Record Examination (Aptitude Test), and 4) degree of commitment to the field of study. Foreign students, furthermore, are required to attain a satisfactory score on the Test of English as a Foreign Language administered by the Educational Testing Service, and may be required to take English 106J (Advanced Composition for Foreign Students) and 109J (Introduction to Literature) beyond the minimum University requirements in English.

A brochure describing the Department can be obtained at the departmental office, 222 Royce Hall. No additional application forms are required by the Department besides those used by Graduate Admissions.

Advising. See the Departmental Office on an annual basis for the appropriate advisers in Japanese studies and Chinese studies.

Besides this formal advising, students are encouraged to consult with faculty members.

Academic progress will be monitored closely if a student's grade point average falls below 3.0; the progress of all graduate students will be evaluated at the end of the academic year at the meeting of the entire faculty of the Department.

Students are required to meet with their Graduate Adviser at least once every quarter to establish their study program and check their progress in it. Advisers keep short informal notes of these meetings. Departmental committees to administer the M.A. examination in Chinese and Japanese are established each year by the Chair of the Department.

Major Fields. The Department recognizes two fields of specialization at the M.A. level: Chinese language and literature and Japanese language and literature.

Foreign Language Requirements. Students majoring in Chinese will be required to present evidence of completion of one year of Japanese with a grade of B or better, and those majoring in Japanese will be required to present evidence of completion of one year of Chinese with a grade of B or better. This requirement need not be fulfilled before admission to the M.A. program.

Course Requirements. Total number of courses required for the degree: 11. Number of graduate courses required for the degree: 5. Required graduate course: For the Chinese major — O.L. 295 (Chinese Bibliography); For the Japanese major — O.L. 296 (Japanese Bibliography).

With the approval of the Department, up to two courses taken outside the Department will count toward the 11 courses but not toward the five graduate courses.

Thesis or Comprehensive Examination Plan. All students will take Comprehensive Examinations in the areas of Chinese or Japanese 1) language 2) literature and 3) civilization. These exams are given at the end of each quarter.

In addition, a brief research paper embodying the results of independent investigation will be required. The results of the examinations and the quality of the paper will determine whether the student will be permitted to enter the Ph.D. program.

Time to Degree. A full-time student with no deficiencies upon admission to graduate status and with a standard course load should be able to obtain his/her degree after seven quarters.

500 Series Course Limitations. 500 series courses do not count toward the number of required courses.

The Ph.D. Degree

Admission Requirements. The M.A. degree in the Department or its equivalent is required for admission to the doctoral program. A student admitted with an M.A. degree in Oriental Languages from another institution may be required to take supplementary courses before proceeding to the doctoral program. A student admitted with an M.A. degree in a field other than Oriental Languages must fulfill the course requirements for the M.A. degree. In either case, the student may be required to submit a brief research paper demonstrating his/her ability to conduct original research and his/her aptitude in communicating his/her findings.

A brochure describing the Department can be obtained at the departmental office, 222 Royce Hall.

Three letters of recommendation by professors and others are required.

No additional application forms are required by the Department besides those used by Graduate Admissions.

Advising. See the Departmental Office on an annual basis for the appropriate advisers in Japanese and Chinese studies.

Personal advisers are assigned to new students at the time of admission; changes can be made for good reason.

The student's progress will be evaluated at the end of the academic year at a meeting of the entire faculty of the Department.

Students are required to meet with their advisers at least once every quarter to review their progress and plan their program; the Graduate Advisers keep short informal notes of these meetings.

A guidance committee consisting of three members, two of whom will be from the student's major language area and one from the minor language area, will be appointed for all entering doctoral level students. The student will select his/her fields of examination with the approval of this committee.

Major Fields or Subdisciplines. The Department recognizes three major fields at the Ph.D. level:

a. Chinese language and literature with the subdisciplines: poetry, drama, fiction and archaeological inscriptions.

b. Japanese language and literature with the subdisciplines: ancient, medieval, early modern and modern Japanese literature.

c. Buddhism with the subdisciplines: Chinese Buddhism and Japanese Buddhism.

Foreign Language Requirement. The student will demonstrate a reading knowledge of French and German by passing the Graduate School Foreign Language Test administered by the Educational Testing Service (minimum passing score: 500), or by successful completion of a level 5 course (with a grade of B or better). (With the approval of the Department, one of these languages may be substituted by another language or an additional year of Japanese for the Chinese major or Chinese for the Japanese major.)

Course Requirements. A minimum of five courses beyond the M.A. degree is required. In addition, students whose major field of interest is Chinese language and literature will present evidence of successful completion of three courses in modern Japanese at the intermediate level (19A-19B-19C) or higher; those whose major field of interest is Japanese language and literature will present evidence of successful completion of three courses in classical Chinese (13A-13B-13C) or higher. Those whose major field of interest is Buddhism must take five quarters of Sanskrit and, in addition, one quarter of Pali. A grade of B or better is required for all language courses.

Written and Oral Qualifying Examinations

The Language Examination: The student will take a language examination in his/her major language area well in advance of the Written Qualifying Examinations. The examination will consist of translations into English to test the student's ability to render the language into English accurately and in an acceptable style.

Written Qualifying Examinations: The student will take three written examinations, as follows:

1. For the major in Chinese language and literature:

a. A general examination in Chinese language and literature.

b. An examination in poetry, drama, fiction or archaeological inscriptions.

c. An examination in one of the following fields: Japanese language and literature, Buddhism (Chinese), Chinese archaeology (not open to those who offer archaeological inscriptions as a subfield) or a cognate field offered in another departmental or interdepartmental program in the Graduate Division and approved by the Department.

2. For the major in Japanese language and literature:

a. A general examination in Japanese language and literature.

b. An examination in ancient, medieval, early modern or modern Japanese literature.

c. An examination in one of the following fields: Chinese language and literature, Buddhism (Japanese) or a cognate field offered in another department or interdepartmental program in the Graduate Division and approved by the Department.

3. For the major in Buddhism:

a. A general examination in Buddhism.

b. An examination in a specified subfield in Buddhism.

c. A general examination in Chinese or Japanese language and literature or a cognate field.

All three examinations must be taken within four weeks. The student will take these Written Qualifying Examinations after satisfying all language and course requirements. With the approval of the Department, a student may repeat the examinations once only.

After successful completion of these examinations, the Chair of Department recommends the formation of a doctoral committee.

The Oral Qualifying Examination: The student must pass an Oral Qualifying Examination on the proposed dissertation topic and in appropriate related areas of study.

The Dissertation: The student will present a dissertation embodying the results of independent investigation. If the student changes his/her dissertation topic after being advanced to candidacy, he/she will be required to take written examinations in fields relevant to the new topic. Students who fail to meet the maximum time limit for the completion of the dissertation will be required to take the Written Qualifying Examinations again.

Final Oral Examination Following Completion of the Dissertation. A final oral defense of the dissertation will be optional at the discretion of the doctoral committee.

Time to Degree. From graduate admission to completion of the dissertation, the normative time-to-degree is 18 quarters (six years).

Candidate in Philosophy Degree. The Candidate in Philosophy Degree is available on advancement to candidacy.

Disqualification and Appeal of Disqualification. A student may be disqualified if his/her grade point average falls below 3.0 in upper division and graduate courses in the Department and such other courses deemed relevant. Failure for a student to make "normal progress" may also result in disqualification. With the approval of the Department, a student may repeat the Comprehensive/Qualifying Examinations once only. Failure in these exams on the second try will result in automatic disqualification. In all cases of disqualification, the decision will be made by the entire faculty.

Upper Division Courses

113A-113B. Intermediate Classical Chinese.

115A-115B-115C. Advanced Spoken Japanese.

119A-119B. Advanced Modern Japanese.

121A-121B-121C. Advanced Modern Chinese.

122A-122B. Readings in Modern Chinese Literature.

124A-124B-124C. Readings in Modern Expository Chinese.

126. Post-1949 Chinese Literature.

129. Introduction to Classical Japanese.

134A. Introduction to Kawabata Yasunari.

134B. Introduction to Mushakoji Saneatsu.

135. Buddhist Themes in Asian Literature.

137. Introduct2ion to Kambun and Other Literary Styles.

139. Introduction to Buddhist Texts.

140A-140B-140C. Chinese Literature in Translation.

141A-141B. Japanese Literature in Translation.

142A. Readings in the Japanese Family System.

142B. Human Problems in the Modernization of Japan.

145. Readings in Modern Expository Japanese.

151A-151B. Readings in Traditional Chinese Fiction.

152A-152B. Readings in Classical Chinese Poetry.

153A. Kawabata's Contemporaries.

153B. Introduction to Shiga Naoya.

154A-154B. Mongolian.

160. Elementary Sanskrit.

161. Intermediate Sanskrit.

162. Advanced Sanskrit.

163A-163B-163C. Readings in Chinese Literary Texts.

165. Readings in Sanskrit.

167. Introduction to Indic Philosophy.

170A-170B. Archaeology in Early and Modern China.

172. Introduction to Buddhism.

173. Chinese Buddhism.

174. Japanese Buddhism.

175. The Structure of the Japanese Language.

179A. Readings in Medieval Japanese Literature.

179B. Readings in Edo Literature.

183. Introduction to Chinese Thought.

184. Introduction to Japanese Thought.

188. Chinese Etymology and Calligraphy.

189. Chinese Brush Painting.

199. Special Studies in Oriental Languages.

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. A knowledge of Sanskrit equivalent to course 161, and 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 Near Eastern Languages (Iranian Section) M222A-M222B.) Prerequisites: a knowledge of Sanskrit equivalent to course 162, and consent of instructor. Characteristics of the Vedic dialect and readings in the Rig-Vedic hymns. M222B only may be repeated for credit. Mr. Schmidt

223. History of the Japanese Language.

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 up to 1600.

242B. Prose and poetry from 1600 to 1868. May be repeated for credit with consent of instructor.
Mr. Befu

244. Seminar in Traditional Chinese Fiction and Drama. Prerequisites: reading knowledge of colloquial and literary Chinese. Seminar topics will alternate yearly between traditional fiction and drama with emphasis on generic, hermeneutical and historical approaches. Topics in fiction to be chosen from narrative genres from the Chou through the Ching periods. Topics in drama will be chosen from *tsa-chu* and *ch'uan-ch'i*. May be repeated for credit with consent of instructor. Mr. Strassberg

245. Seminar in Modern Japanese Literature. May be repeated for credit with consent of instructor.

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: course 122A or 122B or consent of instructor. Selected readings in twentieth-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: course 152A and/or B, or consent of instructor. **261A.** Chinese poetry from the *Shih-ching* phase to the sixth 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

270. Seminar: Selected Topics in Chinese Archaeology. Prerequisites: 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. Also other selected topics concerning the cultural developments of ancient and medieval China. May be repeated for credit. Mr. Chou

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

Professional Courses

301. Teaching an Oriental Language as a Foreign Language.

Individual Study and Research

All of these courses will be graded S/U. A student may repeat these courses with consent of instructor; however, none of these may apply toward the minimum course requirement for the M.A.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Studies. (1 to 3 courses)

597. Preparation for the Comprehensive Examination for the M.A. or the Qualifying Examination for the Ph.D.

599. Research for and Preparation of the Doctoral Dissertation. (1 to 3 courses)

Related Courses in Other Departments

Anthropology 166. Comparative Minority Relations.
175S. Japan.
261. Comparative Minority Relations.

Art 114A. The Early Art of India.
114B. Chinese Art.
114C. Japanese Art.
115A. Advanced Indian Art.
115B. Advanced Chinese Art.
115C. Advanced Japanese Art.
260. Asian Art.

English 100A. Introduction to Poetry.
140. Criticism.
201. Approaches to 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.
185. The Mongols in East Asian History.
187A-187B-187C. Japanese History.
188A. Early History of India.
200. Advanced Historiography: L. China. M. Japan. P. History of Religions.
201. Topics in History: L. China. M. Japan. P. 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.

Linguistics 103. Introduction to General Phonetics.

120A. Linguistic Analysis: Phonology.

120B. Linguistic Analysis: Grammar.

220. Linguistic Areas.

225. Linguistic Structures. H. Japanese. P. Chinese.

Music 81. Ethnomusicology. Performance Organization: D. Music of China. G. Music and Dance of Japan. J. Music and Dance 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.

C250. Seminars in Regional and Area Political Studies: C. Chinese and East Asian Studies. D. Japanese and Western Pacific Studies.

Sociology 134. Comparative Social Institutions of East Asia.

Pathology

(Office, 13-267 Center for the Health Sciences)

Marcel A. Baluda, Ph.D., *Professor Pathology.*
Luciano Berajas, M.D., *Professor of Pathology in Residence.*
[16]W. Jann Brown, M.D., *Professor of Pathology and Psychiatry.*
Alistair J. Cochran, M.D., *Professor of Pathology and Surgery/ Gynecology in Residence.*
Walter F. Coulson, M.D., *Professor of Pathology (Vice-Chair of the Department).*
Robert Y. Foos, M.D., *Professor of Pathology.*
Hideo E. Itabashi, M.D., *Professor of Pathology and Neurology in Residence.*
Harrison Latta, M.D., *Professor of Pathology.*
Klaus J. Lewin, M.D., *Professor of Pathology.*
M. Michael Lubran, M.D., Ph.D., *Professor of Pathology in Residence.*
Robert J. Morin, M.D., *Professor of Pathology in Residence.*
Byron A. Myhre, M.D., Ph.D., *Professor of Pathology in Residence.*
Donald E. Paglia, M.D., *Professor of Pathology.*
David D. Porter, M.D., *Professor of Pathology.*
Denis O. Rodgerson, Ph.D., *Professor of Pathology in Residence.*
George S. Smith, M.D., *Professor of Pathology.*
Julien L. Van Lancker, M.D., *Professor of Patology (Chair of the Department).*
[16]M. Anthony Verity, M.D., *Professor of Pathology.*
Roy L. Walford, M.D., *Professor of Pathology.*
Luciano Zamboni, M.D., *Professor of Pathology in Residence (Vice-Chairman of Department).*
William H. Carnes, M.D., *Emeritus Professor of Pathology.*
Ruth Gussen, M.D., *Adjunct Professor of Pathology.*
Judith A. Berliner, Ph.D., *Associate Professor of Pathology in Residence.*
Arthur M. Cohen, M.D., *Associate Professor of Pathology in Residence.*
Paul C. Fu, Ph.D., *Associate Professor of Pathology in Residence.*
Juan Lechago, M.D., Ph.D., *Associate Professor of Pathology in Residence.*
Joseph M. Mirra, M.D., *Associate Professor of Pathology.*
David S. Bruckner, Sc.D., *Assistant Professor of Pathology in Residence.*
Gloria Duane, M.D., *Assistant Professor of Pathology in Residence.*
Faye A. Eggerdling, M.D., Ph.D., *Assistant Professor of Pathology.*
Suzanne Fligiel, M.D., *Adjunct Assistant Professor of Pathology.*
Oliver Hankinson, Ph.D., *Assistant Professor of Pathology in Residence.*

Dorothy Rosenthal, M.D., *Adjunct Associate Professor of Pathology.*
Nora C. J. Sun, M.D., *Assistant Professor of Pathology in Residence.*
Takamori Tomura, M.D., Ph.D., *Specialist.*

The Ph.D. Degree (Experimental Pathology)

Admission Requirements. In addition to the University minimum requirements, Graduate Record Examination (GRE) Aptitude Tests are required (may be waived for foreign applicants or M.D.s), and three letters of recommendation. There is no application form in addition to the one used by the University. Because of the sequencing of classes, applicants are generally considered for admission to the Fall Quarter only. For departmental brochures, write to: Chair, Department of Pathology, CHS 13-327, UCLA.

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, one year of physics, one year of general chemistry, one year of organic chemistry, and one year of biological sciences. Physical chemistry, a course in molecular biology, and a course in histology are also strongly recommended. In some cases, deficiencies in the prerequisite may be fulfilled in the first year of study.

Advising. Graduate Adviser: Dr. Judith Berliner (same address). Due to the small size of the program, Dr. Berliner serves as adviser for all first-year students. Students are required to consult with the adviser before registering for courses each quarter. After the first year, the student chooses an individual thesis adviser who heads the committee and serves as the adviser.

Failure to maintain a 3.0 average in more than one quarter may lead to academic probation or termination.

At the end of two years, the student must pass Written Qualifying Examinations, evaluated by staff generally and by the student's committee.

Course Requirements. The following courses are required: Pathology 231A, M240, 242A, 242B, 242C, 244, 250, 251, and Biomathematics 170A. In addition, students beginning the program with a bachelor's degree select 40 units from remaining Pathology courses and related biomedical areas of interest at the upper division or graduate level. Students entering the program with a master's degree or M.D. may have fewer elective units to complete toward the Ph.D.

Teaching Experience. Students must act as teaching assistants for one quarter in medical or dental student pathology courses.

Written and Oral Qualifying Examinations. After the core course requirements are completed, usually at the end of the second year, a comprehensive Written Qualifying Examination covering general knowledge is administered by the departmental staff. It is given as a 6-hour written examination; if evaluators feel that some questions should be elaborated on orally, students will do this within three months of the written examination. If failed, the examination may be repeated once. Six months to one year after the written examination, an Oral Qualifying Examination is administered by the student's doctoral committee. This examination normally includes defense of the subject matter of the proposed dissertation topic. Each student will be expected to have done preliminary work before the examination. Candidates must demonstrate a wide and comprehensive knowledge of their special subject. Upon passing, the student will advance to candidacy.

Doctoral Committee. The doctoral committee is formed according to the conditions set by the Graduate Council.

Final Oral Examination Following Completion of the Dissertation. All candidates are required to defend their dissertation at an oral open to the public. The purpose of the dissertation is to demonstrate ability for independent investigation and proficiency in the field.

Time to Degree. From admission to Written Qualifying Examination: six quarters. From Written Qualifying Examination to approval of proposal and Oral Qualifying Examinations: two quarters. From advancement to candidacy to Final Oral Examination: three to six quarters. From graduate admission to awarding of degree: 12 to 15 quarters.

Disqualification and Appeal. Students not obtaining at least a 3.0 average in more than one quarter will be terminated. Failing the Written or Oral Qualifying Examination twice also leads to disqualification. The student may appeal by letter to the graduate committee.

Additional Information. Students are generally accepted into the program for the purpose of obtaining a Ph.D. in Experimental Pathology. However, the Department has also been approved to award a master's degree in Experimental Pathology. This has been reserved for cases in which a student was unable to finish the full Ph.D. program but whose completed work was 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. The student will also be expected to enroll in a minimum of 8 units of 599 each quarter starting in the third year. These do not count toward the minimum course requirements for the degree.

3. The Written and Oral Qualifying Examinations taken on the same schedule as for the Ph.D. The student must pass the Written Qualifying Examination at the master's level. The Oral Qualifying Examination acts as the *Comprehensive Examination*. A thesis is also required which encompasses individual research done by the student.

Graduate Courses

200A. Dental Pathology. (¾ course) Prerequisite: consent of instructor. Course of Pathology for Dental Students emphasizing the fundamental causes of disease processes, using as examples selected lesions or diseases of major organ systems.
Mr. Foos and the Staff

M215. Interdepartment Course in Tropical Medicine. (½ course) (Same as Microbiology and Immunology M215, Medicine M215 and Pediatrics M215.) Prerequisites: basic course in microbiology and parasitology or infectious diseases in the schools of medicine or public health. The course draws upon 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. Lectures, demonstrations and audiovisual materials will be used to describe diseases which are prevalent in or localized to certain geographic areas. Although major emphasis will be in infectious diseases, problems in nutrition and exotic non-infectious diseases will be covered. A syllabus will supplement the topics covered in the classroom. Graded S/U.

231A. Pathological Anatomy and Physiology. (1½ courses) Lecture, two hours; discussion, six hours; laboratory, four hours; other, six hours. Prerequisites: Graduate Standing and 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 will be presented. Concentration will be in the area of General Pathology.
Mr. Verity and the Staff

231B-231C. Pathophysiology of Disease. (1½ courses each) Prerequisites: course 200A, regular graduate student status and 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 will be presented. Concentration will be in the area of General Pathology. In-Progress grading basis.
Mr. Lewin and the Staff

232. Topics in Vertebrate Neurobiology. (½ course) An introduction to the cell biology of the vertebrate central nervous system with special reference to its development, structure, and potential disease processes.

235A-235B. Regulation of Gene Expression in Mammalian Cells. (½ course each) Prerequisite: consent of instructor. Description of intracellular information flow in mammalian cells by stimuli of different natures as well as induced changes such as induction, repression, differentiation and neoplastic transformation will be analyzed. Use of culture models and its biopathological implications will be stressed. To be offered alternate years. 235A, Fall Quarter, and 235B, Winter Quarter.

M240. Immunopathology. (½ course) (Same as Medicine M240.) Lecture, two hours per week. Prerequisites: Immunology course and consent of instructor. Study of the role of immunologic phenomena in the production of lesions and disease. Topics will include immuno complex disease, antitissues antibody, immunologic mediators, cell-mediated immunity, and infectious diseases.
Mr. Glassock and Mr. Porter

242A. Molecular Mechanisms in Disease. (½ course) Prerequisites: course 231A, consent of instructor. The course concerns itself with 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 also with an interpretation of structural and functional disturbances in terms of the molecular alterations.
Mr. Van Lancker and the Staff

242B. Molecular Mechanisms in Disease. (½ course) Prerequisites: course 242 or 242A; consent of instructor. This course is a continuation of Pathology 242A, both of which concern themselves with descriptions of molecular events resulting from administration of injurious chemical and physical agents (u.v., x-rays, carcinogens, toxin, etc.) and from reactions to injuries (e.g., necrosis, degeneration, hyperplasia, neoplasia, inflammation, etc.); and also with an interpretation of structural and functional disturbances in terms of molecular alterations.
Mr. Van Lancker and the Staff

242C. Molecular Mechanisms of Disease. Prerequisite: consent of instructor. This course is part of Molecular Mechanisms of Disease (A, B, C) and will cover aspects of neoplasia in relation to alterations in the control of cell growth, chemical carcinogenesis and the biology of cancer.
Mr. Hankinson

244. Electron Microscopy in Experimental Pathology. (¾ course) Prerequisite: consent of instructor. 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 and Mr. Zamboni

245. Environmental Pathology. Prerequisites: Graduate Standing and consent of instructor. This course is designed to explore the interrelationships of man with his total environment. A series of special topics will be presented to discuss the effect on man of changes in the compositions of air, water, soil and other materials. Graded S/U.
Mr. O'Donnell and the Staff

250A-250B-250C. Pathology Graduate Student Seminar. Prerequisite: open only to students in experimental pathology. Required for all pathology graduate students. Review and discussion of current literature and research in special topics of experimental pathology.

251. Pathology Graduate Student Laboratory Seminar. Prerequisite: consent of instructor. The course consists of ten, two-hour seminars which may include demonstrations of apparatus and methods dealing with new and advanced experimental techniques of value in experimental pathology. The seminars will be conducted by pathology department staff and guest lecturers. Subjects covered will include the biochemistry, biological and morphological techniques in tissue fractionation, tissue culture and radioautography (electron microscopy, etc.) that are frequently in the study of disease mechanisms.
Mr. Hankinson

****253. Free Radical Pathology. (½ course)** Lecture, four and one half hours per week. Prerequisites: basic Biochemistry, Physical Chemistry. Free radicals, mechanisms of formation, properties and reactions. Their reactions with significant biomolecules. Modes of production *in vivo*. Reactions *in vivo*. Protection against and sensitization towards these damaging effects.
Mr. O'Donnell

M256. Seminar in Viral Oncology. (½ course) (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.

M257. Introduction to Toxicology. Lecture, four hours. Prerequisite: Pharmacology 241 or consent of instructor. Biochemical and systemic toxicology, basic mechanisms of toxicology and the interaction of toxic agents with specific organ systems.
Mr. Taylor

M258. Pathologic Changes in Toxicology. (Same as Pharmacology M258.) This course is 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 will be covered.
Ms. Berliner

****7260. Quantitative Approaches to Microscopic Anatomy. (½ course)** Lecture, two hours per week. Prerequisite: consent of instructor. Practical and theoretical approaches in the application of measurement to anatomical structures. General principles of estimation of volume, surface area and number will be covered by stereology and other techniques.
Ms. Berliner

261A-261B-261C. Laboratory Rotation. (½ course each) (Formerly numbered 251A-251B-251C.) Laboratory, six hours. Students will get an introduction to research with individual instructors, laboratories.

M293. Major Concepts in Oncology. (Same as Cell Biology & Virology M293, Microbiology M293 and Oral Biology M293.) Lecture, three hours. Prerequisite: Graduate Standing or consent of instructor. Course designed for graduate students contemplating research in oncology. Lecture. 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.
Mr. Hankinson, Mr. Sugar

Individual Study and Research

596. Directed Individual Study or Research. (1 to 3 courses) Individual research with members of our staff or of other departments, the latter for the purpose of supplementing programs available in our department. Graded S/U.

597. Preparation for Qualifying Exams. (½ to 2 courses) Prerequisite: one year of course work in pathology. Individual study for qualifying exam. Graded S/U.

599. Preparation of Doctoral Dissertation. (½ to 2 courses) Prerequisites: completion of qualifying exam and most of doctoral research. Completion and writing of thesis. Graded S/U.

Pharmacology

(Office, 23-278 Center for the Health Sciences)

[16]John A. Bevan, B.Sc., M.B., B.S., *Professor of Pharmacology.*
[16]Arthur K. Cho, Ph.D., *Professor of Pharmacology (Vice Chairman of the Department).*
[16]Robert George, Ph.D., *Professor of Pharmacology.*
[16]Donald J. Jenden, B.Sc., M.B., B.S., *Professor of Pharmacology and Biomathematics (Chair of the Department)*
[16]Peter Lomax, M.D., D.Sc., *Professor of Pharmacology.*
[16]Dermot B. Taylor, M.A., M.D., *Professor of Pharmacology.*
Jeremy H. Thompson, M.D., F.R.C.P.I., *Professor of Pharmacology.*
Jorge R. Barrio, Ph.D., *Associate Professor of Pharmacology and Radiological Sciences.*
Rosemary D. Bevan, M.D., *Adjunct Associate Professor of Pharmacology.*
Don H. Catlin, M.D., *Associate Professor of Pharmacology and Medicine.*
Matthew E. Conolly, M.D., *Associate Professor of Pharmacology and Medicine.*

M. David Fairchild, Ph.D., *Adjunct Associate Professor of Pharmacology.*
Larry A. Wheeler, Ph.D., *Adjunct Associate Professor of Pharmacology.*
Sherrel G. Butcher, Ph.D., *Assistant Professor of Pharmacology and Psychiatry.*
R. Craig Kammerer, Ph.D., *Assistant Professor of Pharmacology.*

•

Il Jin Bak, Ph.D., D.D.S., *Adjunct Associate Professor of Neurology and Pharmacology.*
Robert O. Bauer, M.D., *Professor of Anesthesiology, Obstetrics and Gynecology and Pharmacology.*
Joseph H. Beckerman, Pharm.D., *Lecturer in Pharmacology.*
Yi-Han Chang, Ph.D., *Adjunct Associate Professor of Medicine and Pharmacology.*
Werner E. Flacke, M.D., *Professor of Anesthesiology and Pharmacology.*
Mark A. Goldberg, M.D., Ph.D., *Professor of Neurology and Pharmacology.*
William L. Hewitt, M.D., *Professor of Medicine and Pharmacology.*
Murray E. Jarvik, M.D., Ph.D., *Professor of Pharmacology and Psychiatry.*
Louis Levy, Ph.D., *Professor of Medicine and Pharmacology.*

The Ph.D. Degree

Admission Requirements. In addition to meeting the requirements of the Graduate Division, the student must have received the 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 status, but any deficiencies will have to be removed within a specified time. Graduate Record Examination scores are required of all applicants to the Department as well as three (3) letters of recommendation. Applications are accepted for the Fall Quarter only. The Departmental Graduate Training Committee (three faculty members) is solely responsible for the selection of new students. Interviews may be requested by the Graduate Training Committee.

Prospective students may write for a departmental brochure to the following address: Graduate Student Office, Department of Pharmacology, UCLA School of Medicine, Los Angeles, California 90024, (213) 825-6567.

Advising. Address: Dr. Arthur K. Cho, Graduate Adviser. Department of Pharmacology, UCLA School of Medicine, Los Angeles, California 90024, (213) 825-6567.

Dr. Cho is the Graduate Adviser for all entering graduate students and/or students in their first and second year of study. All students must obtain approval from Dr. Cho for enrollment into courses each quarter and may want to discuss their own academic program. By the end of the second year, the student choses a faculty sponsor to serve as his/her main adviser in thesis research.

Major Fields or Subdisciplines. Cardiovascular Pharmacology; Chemical Pharmacology; Clinical Pharmacology; Immunopharmacology; Neuroendocrine Pharmacology; Neuropharmacology; Psychopharmacology.

Course Requirements

Courses Required: Biological Chemistry 101-A,B,C; or Biological Chemistry 201-A,B, Biological Chemistry 101C; Pharmacology 200 (Introduction to Labpratory Research) — three quarters; Pharmacology 201 (Principles of Pharmacology and Toxicology); Pharmacology 202-A,B (Clinical Pharmacology); Pharmacology 212-A,B (Graduate Commentary — Clinical Pharmacology); Pharmacology 234-A,B,C (Experimental Methods in Pharmacology); Pharmacology 237-A,B,C (Neurotransmission); Pharmacology 241 (Introduction to Chemical Pharmacology); Pharmacology 251 (Seminar in Pharmacology) — must be taken every quarter; Pharmacology 291 (Selected Topics in Pharmacology) — three quarters (or alternative courses); Physiology 101; Physiology 102; Physiology 103; One course in Biostatistics.

All coursework should be completed by the end of the sixth quarter prior to taking the Departmental Comprehensive Examinations.

Student Rotation. The Pharmacology Department has provided a system of laboratory rotations (Pharmacology 200) in order to familiarize the student with a variety of pharmacological research areas and techniques. During the first six quarters the student is in the Department, he/she will participate in projects of his/her choosing. If possible, two of these will be during the regular academic year and the third will be during the summer. He/she will also become familiar with the literature relevant to the various research projects, and thus establish a basis for the selection of his/her own research area. Those students who have already chosen a research area at the time they enter the Department may benefit by choosing to work in the related laboratory during the summer prior to entry into the Department. This would provide an uninterrupted period of over two months to work on a research project.

The student must submit to the Graduate Training Committee a report of his/her activities in the various research groups by the end of the quarter. The report should include:

1. The nature of the project.
2. How the student participated.
3. The results obtained.
4. Critical evaluation of the project.

Teaching Experience. Seminar presentations are required of all students in the graduate program.

The responsibility for completion of all technical requirements for the doctoral degree rests solely with the candidate.

Written and Oral Qualifying Examinations

Examinations in Pharmacology 'Core' Courses. 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. The course instructor reserves the right to dictate the form and content of the examinations.

Departmental Comprehensive Examination. Upon the completion of the first two years of study, each student will be required to take a Departmental Comprehensive Examination consisting of a written part and an oral part. The student will then be recommended:

a) For continuation of his/her studies towards the Ph.D. degree.

b) For further remedial study.

c) 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. Students will be expected to know basic principles of pharmacology and also the status of topics of current interest in pharmacology.

Oral Qualifying Examination. After passing the Departmental Comprehensive Examination, the student must take the Oral Qualifying Examination within 18 months. This oral examination is administered by the doctoral guidance committee. The guidance committee is selected by the student pending approval by the Graduate Training Committee and the Department Chair.

The student may be asked any question of pharmacological relevance; however, most questions will concentrate on the background literature, experimental methods, and implications of his/her field of interest and dissertation project. When the student passes this examination, he/she is eligible to petition the Graduate Division for advancement to doctoral candidacy.

Final Oral Examination. The Guidance Committee may administer (and usually does) a Final Oral Examination after the student has submitted his/her dissertation (Defense of Dissertation).

Credit by Examination. Graduate students may arrange to take courses for credit by examination. Up to three courses of credit may be earned in this manner. Approvals must be obtained from the course instructor, the Department, and the Dean of the Graduate Division.

Students not passing any one of the above required examinations may be reexamined at a later date determined by the Guidance Committee.

Final Oral Examination Following Completion of the Dissertation. A final oral examination may be administered upon submission of the dissertation.

Time to Degree

1. Students must select a major professor by the end of the sixth quarter.

2. Students must take the Departmental Comprehensive Written and Oral Examinations by the end of the sixth quarter.

3. The Oral Qualifying Examination must be taken within 18 months after the Departmental Comprehensive Examination.

4. Time to final completion of the graduate program is 15 quarters.

Disqualification. The graduate student's progress is evaluated by performance in coursework and in the Comprehensive and Qualifying Examinations. A grade point average of at least 3.0 is required for coursework or the student may be subject to dismissal by the Graduate Training Committee. Performance in the latter two examinations is graded pass, fail and deferral. Deferral means that the student will be asked to repeat some part or all of the examination.

Appeals. In the event that the student is graded "fail" and wishes to appeal the decision, he/she may do so in writing to either the Graduate Training Committee or to the Chair of the Department. The letter should state his/her reasons for the appeal and for reconsideration of the decision. These statements will be reviewed either by the Graduate Training Committee itself or an Ad Hoc Committee within the Department.

Other Relevant Information. The Department of Pharmacology offers an M.D./Ph.D. program concurrently with the UCLA School of Medicine. Candidates must be accepted by the School of Medicine Admissions Office in order to qualify.

Upper Division Courses

101A-101B-101C. Elements of Pharmacology. (2 courses) Prerequisite: enrollment in School of Dentistry or consent of instructor. Required course for junior dental students. A general consideration of the modes of action and the pharmacological and toxicological effect of drugs with a more detailed study of those agents used in clinical dentistry and the principles governing their use. Mr. Lomax in charge

110. Drugs: Mechanisms, Uses and Misuse. (½ course) Prerequisites: Biology 5, 6, 7; Chemistry 21, 23, 25; or their 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

199. Special Studies. (½ to 2 courses) Prerequisites: consent of instructor and Chairman of the Department. Special studies in pharmacology, including either reading assignments or laboratory work or both, designed for appropriate training of each student who registers in this course.

Graduate Courses

200. Introduction to Laboratory Research. (½ to 1 course) Prerequisite: consent of instructor. Individual projects in laboratory research for beginning graduate students. At the end of each quarter the student will submit to his/her supervisor a report covering the research performed. Pharmacology graduate students must take this course three times during their first two years in residence.

201. Principles of Pharmacology. Prerequisites: Mammalian Physiology and 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 is focused on the modes of action, pharmacokinetics and disposition to provide a scientific basis for their rational use in medicine. Mr. Bevan in charge

202A-202B. Clinical Pharmacology. (2 courses) A series of lectures and case presentations designed to illustrate the principles of pharmacology in a clinical context, and the solution of problems of practical therapeutics by reference to pharmacokinetics, mechanisms of action and disposition of drugs. Mr. Conolly in charge

212A-212B. Graduate Commentary: Clinical Pharmacology. (½ course each) Prerequisites: Mammalian Physiology and Biochemistry. A supplementation of topics covered in Pharmacology 202A and 202B. Primarily for graduate students. Mr. Conolly

234A-234B-234C. Experimental Methods in Pharmacology. (½ course 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. Cho, Mr. George

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

237A-237B-237C. Neurotransmission. Prerequisites: courses 241, 234A-234B-234C. 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. The evidence for mechanisms involving other possible transmitters will also be critically examined. Mr. Bevan, Mr. George, Mr. Jenden

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 will be given 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 pre- and post-natal exposure. Particular emphasis will be placed on the relevance of this knowledge to human behavior. Mr. Russell

***[1]M239. Psychopharmacology.** (Same as Psychiatry M239.) Prerequisite: consent of instructor. A presentation of the effects of drugs upon behavior with special attention to drugs used in psychiatry and drug seeking behavior. Physiological and biochemical mechanisms underlying such actions will be analyzed. Reports on relevant current research will be made. Mr. George, 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

251. Seminar in Pharmacology. (½ course each) Seminars presented by students, faculty, and guest lecturers on a variety of topics. Mr. Baker

***[1]253. Seminar in Environmental Toxicology. (½ course)** 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

M257. Introduction to Toxicology. Prerequisite: Pharmacology 241 or consent of instructor. Biochemical and systemic toxicology, basic mechanisms of toxicology, and interaction of toxic agents with specific organ systems. Mr. Taylor

M258. Pathologic Changes in Toxicology. (Same as Pathology M258.) This course is designed to give students experience in learning the normal histology of tissues which are major targets of toxin and the range of pathologic changes occurring in these tissues. Liver, bladder, lung, kidney, nervous system and vascular system will be covered.

***[1]261. Introduction to Clinical Pharmacology. (½ course)** 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.

291. Special Topics in Pharmacology. (½ to 1 course) Prerequisite: consent of instructor. Examination in depth of topics of current importance in pharmacology. Emphasis on recent contributions of special interest to advanced doctoral candidates, academic staff or visiting faculty. May be taken for credit three times.

Individual Study and Research

596. Directed Individual Research in Pharmacology. (1 to 3 courses)

599. Research for and Preparation of the Doctoral Dissertation. (1 to 3 courses)

Philosophy

(Office, 321 Dodd Hall)

Marilyn McCord Adams, Ph.D., *Professor of Philosophy.*
Robert Merrihew Adams, Ph.D., *Professor of Philosophy.*
Rogers Albritton, Ph.D., *Professor of Philosophy.*
Tyler Burge, Ph.D., *Professor of Philosophy.*
Alonzo Church, Ph.D., *Professor of Philosophy and Mathematics in Residence.*
Keith S. Donnellan, Ph.D., *Professor of Philosophy.*
Philippa Foot, M.A., *Professor of Philosophy.*
Montgomery Furth, Ph.D., *Professor of Philosophy.*
Donald Kalish, Ph.D., *Professor of Philosophy (Chair of the Department).*
David Kaplan, Ph.D., *Professor of Philosophy.*
Herbert Morris, Ph.D., *Professor of Philosophy and Law.*
Robert M. Yost, Ph.D., *Professor of Philosophy.*
Hugh Miller, Ph.D., *Emeritus Professor of Philosophy.*
Wesley Robson, Ph.D., *Emeritus Professor of Philosophy.*
Thomas E. Hill, Jr., Ph.D., *Associate Professor of Philosophy.*
Warren S. Quinn, Ph.D., *Associate Professor of Philosophy.*
Jean Hampton, Ph.D., *Assistant Professor of Philosophy.*
Richard A. Healey, Ph.D., *Assistant Professor of Philosophy.*

The Master of Arts Degree

Admission Requirements. It is the policy of the Department to admit only those who plan to earn the Ph.D. degree. For a discussion of admission requirements, consult description under *"The Ph.D. Degree."*

Advising. Consult description under *"The Ph.D. Degree."*

Foreign Language Requirement. The student must demonstrate a reading knowledge of French, German, Latin or Greek. (When relevant to the student's research, another language may be substituted, with the approval of the Department.) This requirement can be satisfied by passing, with a score of at least 500, the Educational Testing Service 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. A student must complete at least nine courses (36 units) numbered over 100 (excluding 199), of which five courses (20 units) must be in the philosophy series numbered between 200-296.

Thesis or Comprehensive Examination Plan. Students seeking the M.A. must pass the Master's Comprehensive Examination. (Consult description under *"The Ph.D. Degree."*) A student who does not pass the Comprehensive Examination on the first try may repeat the examination.

500 Series Course Limitations. 500 series courses may not be applied toward the course requirements for the M.A. in philosophy.

Time to Degree. A full-time student with no deficiencies upon admission to graduate status in the Philosophy Department should be able to complete the requirements for the M.A. in three academic quarters.

Disqualification and Appeal of Disqualification. See description under *"The Ph.D. Degree."*

The Ph.D. Degree

Admission Requirements. 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), official scores from the Aptitude Test of the Graduate Record Examination (GRE) (the Advanced Test in Philosophy is not required), and one official transcript from each institution attended should be sent to the Graduate Counselor, Department of Philosophy. (Such material becomes a permanent part of the applicant's file and will not be returned or forwarded elsewhere.) Departmental information and application can be obtained by writing the Graduate Counselor, Department of Philosophy, UCLA, 405 Hilgard, Los Angeles 90024.

At the end of the student's first year of graduate work, the faculty determine, on the basis of the student's total record, including coursework and the results of the Master's Comprehensive Examination (MAC), whether the student is admitted to the doctoral program. Passing the MAC is neither necessary nor sufficient for admission to the program. In exceptional circumstances, the decision may be postponed to some time during the second year. While the first year does function as a probationary term, the high standards employed for admission to graduate study result in practice in admission of students who are expected to qualify for admission to the doctoral program.

Advising. The purpose of the departmental advising program is three-fold: (1) to assure that the student is aware of all the relevant requirements, opportunities, safeguards, perils, and prospects; (2) to assist him or her to make normal progress toward the degree through a regular sequence of steps; and (3) to provide intellectual guidance and advice in the area of his or her interests. Advising for the first-year students begins with an orientation meeting held during the first week of the Fall Quarter. At that meeting, each first-year student is assigned an adviser for his or her first year. After the first year, a student may continue to work with his or her initial adviser, choose a new adviser, or use the departmental Graduate Adviser. Every student must consult with his or her adviser each quarter before registering. The adviser must approve and sign the student's study list before it can be officially filed. Students are encouraged to use the advising services of the Department as fully as possible at any time and for any academic purpose.

Foreign Language Requirement. The student must demonstrate a reading knowledge of French, German, Latin or Greek. (Another language may be substituted, with the approval of the Department, if it is used in the student's doctoral work.) The student may satisfy this requirement by having completed, with a grade of C or better, the final course in a 2-year sequence (four semesters or six quarters) of college courses in an approved language. Alternatively, the student may satisfy the requirement by passing the Department language examination. For this examination, the student selects a philosophical book in the foreign language. The book must be of moderate linguistic difficulty and it must be at least 100 pages long. (If the book is longer than 100 pages, portions amounting to 100 pages may be selected for study.) The book must be approved by the department committee responsible for graduate foreign language examinations. In the examination, which is written, the student must translate 25 lines of the approved book without a dictionary and 25 lines with the aid of a dictionary in a 90-minute period. A student planning to take an examination must give the committee two weeks notice so that it will have time to select the passages on which he/she will be examined. 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 the student's 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 the student's 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 a student who has done graduate coursework elsewhere may petition the Department (through his or her adviser) to have previous graduate coursework substituted for some of the 12 required courses, and in exceptional cases such a petition may be granted.

Written and Oral Qualifying Examinations

Master's Comprehensive Examination. The Master's Comprehensive Examination (MAC) consists of four different examinations. One is in logic, on the materials covered in Philosophy 31 and 32. Currently, this examination takes the form of the final examination for Philosophy 32, which is offered most quarters. Consult "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. All four examinations are graded by a special committee appointed by the Chairperson. The Master's Comprehensive Examination is passed or failed as a whole, which does not necessarily require passing of all four parts. Performance on all four parts is weighed by the Department in determining whether the examination is passed or failed.

Propositions. In the second and third years, students 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. A proposition must include: a) a formulation of an important philosophical problem; b) a formulation of two or three front-running solutions to or treatments of the problem; c) a criticism of these solutions, and d) the author's suggestions as to how discussion of the problem should continue. Propositions should be between 25 and 35 pages in length. Consult the Philosophy Department "Manual for Graduate Students in Philsophy" for further details on format, style and content. Propositions are researched and written in a series of individual studies courses (Philosophy 596) which usually begin in the first quarter of the student's second year.

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 the student can take the Oral Qualifying Examination. Consult the "Manual for Graduate Students in Philosophy" for further details.

Oral Qualifying Examination. In the third year, the student begins a new series of individual studies courses (Philosophy 596) with his or her dissertation supervisor. In these, the student develops a well-defined dissertation project. When the dissertation supervisor judges the project to be sufficiently well-developed, a doctoral committee is chosen and an Oral Qualifying Examination is scheduled. The primary purpose of this examination is to determine whether the student will be able to complete the dissertation successfully. Before the examination is held, the relevant written work

the student has completed under the direction of the dissertation supervisor is made available to all members of the doctoral committee for their inspection. The scope of the examination varies according to the definiteness of the dissertation topic and the extent of the student's preliminary investigations. It need not be narrowly restricted to the announced dissertation topic, but may extend into relevant neighboring philosophical fields, and also into those non-philosophical fields with which the student should be familiar in order to pursue his or her investigations. Although the primary purpose of the examination is to determine the adequacy of the student's preparation and abilities, its secondary purpose is to suggest remedies for any weaknesses that it may reveal. In case of failure, the student's doctoral committee makes a recommendation for or against allowing a second oral examination. If the committee recommends for a second oral, the student may request its scheduling when, in the judgment of the dissertation supervisor, he or she is sufficiently prepared.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination may be waived by the doctoral committee. This determination is usually made at the time of the Oral Qualifying Examination.

Time to Degree. A full-time student with no deficiencies upon admission to graduate status in the Philosophy Department should be able to complete the requirements of the Ph.D. in 18 academic quarters.

Candidate in Philosophy Degree. Students are eligible to receive the C.Phil. degree upon advancement to candidacy for the Ph.D.

Disqualification. Students not yet admitted to the doctoral program are reviewed at the end of their first year. At this time, the Department will either admit the student to the doctoral program, not admit the student to the doctoral program, or defer the decision until a specific future time. Decisions not to admit or to defer may be appealed by petitioning the Department through the Chairperson.

The record of students admitted to the doctoral program who have fallen seriously behind in normal progress toward the Ph.D. will be reviewed at the end of each academic year. The chief purpose of this meeting will be to provide informal counsel to help the student re-establish normal progress. In rare cases, however, the Department may recommend termination from the program.

Appeals. A terminated student may petition the Department through the Chair to reconsider the case and may submit relevant supporting statements or information for the Department to consider.

*Graduate Courses

No Group

200A-200B-200C. Seminar for First-Year Graduate Students. Prerequisite: open only to first-year graduate students in philosophy. Selected topics in metaphysics and epistemology, history of philosophy, and ethics. Required for all first-year graduate students.

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. (Formerly numbered 251A.) Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor. Mr. Furth

206. Topics in Medieval Philosophy. Lecture/discussion, four hours. 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. Consult the department for topic to be treated in a given quarter. May be repeated for credit with consent of instructor. Mrs. Adams

207. Seminar: History of Medieval and Renaissance Philosophy. (Formerly numbered 251B.) Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor. Mrs. Adams

208. Hobbes. (Formerly numbered 203.) 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*. Such issues as the problem of scepticism, the foundations of knowledge, the existence of God, the relation between mind and body will be discussed. May be concurrently scheduled with course C109.

C210. Spinoza. Prerequisite: consent of instructor. Selected topics in the philosophy of Spinoza. May be concurrently scheduled with course C110, in which case there will be a two-hour biweekly discussion meeting for graduates only, and additional readings and a longer term paper will be required of 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 will be a two-hour biweekly discussion meeting for graduates only, and additional readings and a longer term paper will be required of graduates. Mr. Adams

C212. Locke and Berkeley. Prerequisite: consent of instructor. Selected topics in the philosophy of Locke and Berkeley. May be offered concurrently with course C112. May be repeated for credit with consent of instructor. Mr. Donnellan

C214. Hume. Prerequisite: consent of instructor. Selected topics in the philosophy of Hume. May be concurrently scheduled with course C114. May be repeated for credit with consent of instructor. Mr. Donnellan

215. Kant. (Formerly numbered 207.) Prerequisite: consent of instructor. An intensive study of selected writings of Immanuel Kant. Mr. Hill

216. Nineteenth Century Philosophy. (Formerly numbered 211.) Prerequisite: consent of instructor. Topics in nineteenth century philosophy. May be repeated for credit with consent of instructor.

219. Seminar: History of Modern Philosophy. (Formerly numbered 251C.) Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor.

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

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. In this course, possibilities in regard to non-Neumannian set theories will be 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

222A-222B-222C. Gödel Theory.

222A. Prerequisites: several courses in logic, preferably including course 135. First in a series of three courses leading up 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 up to Gödel's incompleteness theorem and Tarski's definition of truth.

222C. Prerequisites: courses 222A and 222B. Gödel numbering and Gödel theory. Final course in the Gödel Theory series. Mr. Church

224. Philosophy of Physics. Prerequisite: consent of instructor. Selected philosophical topics related to physical theory, depending on interests and background of the participants. Might include: 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. Prerequisite: course 134 or Mathematics 112A-112B or consent of instructor.

226. Topics in Mathematical Logic. Prerequisite: consent of instructor. Content will vary from quarter to quarter. Consult the department for topic to be treated in a given quarter. May be repeated for credit with consent of instructor. Mr. Kalish, Mr. Kaplan

227. Philosophy of Social Science. Prerequisite: consent of instructor. An examination of philosophical problems concerning concepts and methods used in the social sciences. Topics considered 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.

230. Seminar: Logic. (Formerly numbered 261.) Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Church, Mr. Kaplan

231. Seminar: Intensional Logic. (Formerly numbered 260.) 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

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

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

233. Seminar: Philosophy of Physics. (Formerly numbered 263.) 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. (Formerly numbered 236.) Prerequisites: courses 150, 156, or 157; 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. (Formerly numbered 270.) Prerequisite: consent of instructor. Selected topics. May be repeated for credit with consent of instructor. Mr. Hill

246. Seminar: Ethical Theory. (Formerly numbered 271.) Prerequisite: consent of instructor. Selected topics. Content will vary from quarter to quarter. May be repeated for credit with consent of instructor. Mr. Hill, Mr. Quinn

247. Seminar: Political Theory. (Formerly numbered 272.) Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Ms. Hampton

248. Problems in Moral Philosophy. (Formerly numbered 273.) 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. (Formerly numbered 277.) 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.) 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. For the specific topic to be examined in any particular offering of the course consult the instructor. The course may be repeated for credit with consent of instructor. Mr. Morris

M257. Seminar: Philosophy of Law. (Same as Law M524.) 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

275. Human Action. (Formerly numbered 241.) Prerequisites: two upper division philosophy courses or consent of instructor. An examination of theories, concepts and problems concerning human actions. Topics might 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

Professional Course

495. Teaching of College Philosophy. (½ to 1 course) 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. Graded only on a S/U basis.

Individual Study and Research

The courses in the 500 series do not apply toward the course requirement for the master's degree.

596A-596B. Directed Individual Studies. (½ to 2 courses) Any properly qualified graduate student who wishes to pursue a problem through reading or advanced study may do so if his proposed project is acceptable to a member of the staff. May be repeated for credit. Course 596A offered only on a graded basis; 596B only on a S/U basis.

597. Directed Studies for Graduate Examinations. (½ to 2 courses) Preparation for either the Master's Comprehensive Examination or the Ph.D. Oral Qualifying Examination. To be graded S/U.

599. Research for Doctoral Dissertation. (½ to 2 courses) Prerequisite: advancement to candidacy for the doctoral degree. May be repeated for credit. Offered on a S/U basis only.

Physics

(Office, 3174 Knudsen Hall)

Ernest S. Abers, Ph.D., *Professor of Physics (Chair of the Department).*
Rubin Braunstein, Ph.D., *Professor of Physics.*
Nina Byers, Ph.D., *Professor of Physics.*
Marvin Chester, Ph.D., *Professor of Physics.*
W. Gilbert Clark, Ph.D., *Professor of Physics.*
John M. Cornwall, Ph.D., *Professor of Physics.*
John Dawson, Ph.D., *Professor of Physics.*
Robert J. Finkelstein, Ph.D., *Professor of Physics.*
A. Theodore Forrester, Ph.D., *Professor of Physics and Engineering.*
Burton Fried, Ph.D., *Professor of Physics.*
Christian Fronsdal, Ph.D., *Professor of Physics.*
Roy P. Haddock, Ph.D., *Professor of Physics.*
Theodore Holstein, Ph.D., *Professor of Physics.*
George J. Igo, Ph.D., *Professor of Physics.*
[17]Charles Kennel, Ph.D., *Professor of Physics.*
[17]Leon Knopoff, Ph.D., *Professor of Physics and Associate Director of the Institute of Geophysics and Planetary Physics.*
Steven A. Moszkowski, Ph.D., *Professor of Physics.*
Bernard M. K. Nefkens, Ph.D., *Professor of Physics.*
Richard E. Norton, Ph.D., *Professor of Physics.*
Raymond L. Orbach, Ph.D., *Professor of Physics.*
Philip A. Pincus, Ph.D., *Professor of Physics.*
J. Reginald Richardson, Ph.D., *Professor of Physics.*
Isadore Rudnick, Ph.D., *Professor of Physics.*
J. J. Sakurai, Ph.D., *Professor of Physics.*
Robert A. Satten, Ph.D., *Professor of Physics.*
David S. Saxon, Ph.D., *Professor of Physics.*
Peter Schlein, Ph.D., *Professor of Physics.*
Julian Schwinger, Ph.D., *Professor of Physics.*
William E. Slater, Ph.D., *Professor of Physics.*
Donald H. Stork, Ph.D., *Professor of Physics.*
Harold K. Ticho, Ph.D., *Professor of Physics.*
Alfred Y. Wong, Ph.D., *Professor of Physics.*
Chun Wa Wong, Ph.D., *Professor of Physics.*
Eugene Wong, Ph.D., *Professor of Physics.*
Byron T. Wright, Ph.D., *Professor of Physics.*
Alfredo Baños, Jr., Dr.Eng., Ph.D., *Emeritus Professor of Physics.*
Hans E. Bommell, Ph.D., *Emeritus Professor of Physics.*
Joseph Kaplan, Ph.D., Sc.D., L.H.D., *Emeritus Professor of Physics.*
Kenneth R. MacKenzie, Ph.D., *Emeritus Professor of Physics.*
Norman A. Watson, Ph.D., *Emeritus Professor of Physics.*
Charles D. Buchanan, Ph.D., *Associate Professor of Physics.*
Paul M. Chaikin, Ph.D., *Associate Professor of Physics.*
Ferdinand V. Coroniti, Ph.D., *Associate Professor of Physics and Astronomy.*
Seth J. Putterman, Ph.D., *Associate Professor of Physics.*
Reiner Stenzel, Ph.D., *Associate Professor of Physics.*
Charles A. Whitten, Jr. Ph.D., *Associate Professor of Physics.*
Claude Bernard, Ph.D., *Assistant Professor of Physics.*
Gary A. Williams, Ph.D., *Assistant Professor of Physics.*

•

S. Merton Burkhard, M.S., *Lecturer in Physics.*
J. Kinderman, Ph.D., *Lecturer in Physics.*

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 the preparation of students in the following fields of Physics: Acoustics/Low Temperature, Elementary Particles, Intermediate Energy/Nuclear, Plasma & Astrophysics, Solid State & Condensed Matter, Spectroscopy.

Admission Requirements. The applicant must have an excellent undergraduate record in addition to meeting the University minimum requirements. All applicants are required to take the Advanced Test of the Graduate Record Examination in Physics and to submit three letters of recommendation. Foreign applicants who are applying for financial support (fellowships, teaching assistantships & 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: Graduate Office, Department of Physics, Knudsen Hall 3-145G, UCLA, Los Angeles, California 90024.

The Master of Science Degree

Major Fields or Subdisciplines. It is not required to designate an area of specialization for a terminal master's or M.A.T. 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 the student must pass the five fundamental (core) courses: 221A, 221B, 210A, 210B and 215A. To complete the minimum six graduate courses the student is required to take one of the following courses: 221C, 220, 231A, and pass one of the three with "B" or better. 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 chosen from Physics 596 or seminar courses. Physics 597 and Physics 598 are not acceptable courses for the M.S. degree.

Comprehensive Examination Plan. A passing grade on a Written Comprehensive Examination is required. It is required that it be taken during the first year by UCLA graduates in physics and not later than the fourth quarter of residence by other students. This examination is given twice a year in the Fall and Spring Quarters.

Although this Department operates under the Comprehensive Examination Plan rather than the Thesis Plan, arrangements generally can be made for a student to write a master's thesis, provided he/she has a particularly interesting research problem, and provided some professor is willing to undertake the guidance of his/her work. In this case, the student 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.

Time to Degree. For a full-time student with no deficiencies upon admission to graduate status, taking a course load which is standard for the program: approximately five quarters.

500 Series Course Limitations. (Apply toward the Degree)

Course No.	Unit Value	Grading	Number of Times May Be Repeated
596	2-8	S/U	No limit
597	2-8	S/U	Normally only one repeat
598	2-8	S/U or letter	No limit established

Only 8 units of 500 series quarter units may apply toward the total course requirements for the M.S. degree.

The Master of Arts in Teaching (M.A.T.) Program

Advising. The M.A.T. adviser oversees all stages of progress toward the M.A.T.

All candidates for the M.A.T. degree are required to see the adviser at the beginning of each quarter through the completion of the degree. For further information about the M.A.T. program, direct inquiries to: Director — Merton Burkhard, Master of Arts in Teaching Program, Knudsen Hall 6-130D, UCLA, Los Angeles 90024.

Major Fields or Subdisciplines. It is not required to designate an area of specialization for a M.A.T. degree.

Course Requirements. This degree leads to qualification for teaching credentials at the secondary school or junior college level. Total number of courses — 12½; graduate courses required — five; and professional level courses required (300 series) — five.

A) Required graduate/upper division/professional level courses in physics for the M.A.T. degree:

1) Five graduate physics courses, four of which are chosen from: Physics 210A, 210B, 215A, 221A, 221B
2) Physics 370

B) Also required as part of the M.A.T. in Physics degree are the courses necessary for completion of the State of California Single Subject Instructional Credential, K-12:

1) Education 100, 122, 312, 315
2) Education 330A, 330B
3) Public Health 187 (½ course)

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 the written Comprehensive Examination a third time may be granted by the Committee of Graduate Advisers only under exceptional circumstances.

Time to Degree. The average period of time to degree is two years (six quarters) from graduate admission to conferral of degree.

500 Series Course Limitations. Not applicable for M.A.T. degree.

The Ph.D. Degree

Admission to the Doctoral Program. This is synonymous with graduate admission.

Major Field 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 Chair of the Department recommends the formation of a doctoral committee, a student in the Ph.D. program must satisfy the following core course requirements by taking: Physics 210A, 210B, 221A, 221B, 215A. These 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 mark of "S" the final examination in four of the five courses. A student who fails to obtain a mark of "S" on a given examination may petition to the Committee of Graduate Advisers to repeat the examination in question. These five examinations should be completed by all students in the program by the fifth quarter in residence. In addition to these five required courses, a Ph.D. candidate must fulfill a breadth requirement by taking one of the following courses: Physics 221C, 220, 231. The student is required to take only one of these courses and pass it with a "B". Physics 131B (Complex Variables) is the mathematics prerequisite to graduate classes. If a student has not taken this course or its equivalent in undergraduate status, he/she must plan to do so at the beginning of his/her graduate career.

Written and Oral 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.
3) Fail.

All students in the Ph.D. program must pass this examination at the Ph.D. level of achievement. If a student fails to do so, he/she may take the examination a second time. Permission to take it a third time may be granted, by the Committee of Graduate Advisers, only under exceptional circumstances.

Comprehensive Oral Examination. ("Departmental Field Oral"): The student may arrange for the examination only after completing the core course requirements as well as passing the Comprehensive Written Examination at the Ph.D. level. The examining committee consists of four faculty members in Physics, one designated as Chair, selected by the student. The departmental oral will be a searching and comprehensive exam which may encompass material covered in all graduate level courses but with special emphasis on the field of specialization chosen by the student.

The examination, if failed, may be repeated by the student upon the recommendation of his/her 4-person committee to the Graduate Affairs Officer. All students are expected to complete this examination by the eighth quarter in residence.

After the student has notified the Department that he/she has passed all the preceeding examinations, a doctoral committee will be appointed by the Dean of the Graduate Division, acting for the Graduate Council, upon nomination by the Department Chair. This committee

must consist of not fewer than five members, two of whom must be from departments other than Physics. The student, after consultation with his/her research adviser submits a list of proposed committee members to the Chair of the Department. If approved, these nominations are officially submitted to the Graduate Division by the Graduate Student Office.

Oral Qualifying Examination. The committee for the Oral Qualifying conducts an examination which may include a) material in the student's field of specialization, b) related material that members of the committee from other departments may wish to ask, and c) discussion of the proposed dissertation problem. The committee will indicate its decision on the "Report on the Qualifying Examination" form. At the end of a successful examination, the Chair and members of the committee in consultation with the student shall determine which of its members will 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 will be required.

Final Oral Examination. (If required.) This examination is administered by the doctoral committee. It ordinarily will be a discussion of the student's original work, including his/her dissertation, and other related matters to be determined by the committee. It may be, if the committee so desires, a survey or comprehensive examination.

Advancement to Candidacy. When a satisfactory report on the completion of the Written and Oral Qualifying Examinations has been submitted, the student will be mailed an Application for Advancement to Candidacy. The filing of this application and payment of the fee constitutes formal advancement to candidacy for the Ph.D.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional with doctoral committee.

Time to Degree. From graduate admission to Ph.D. conferral is on the average 18 quarters (six years).

Normal progress toward the Ph.D degree has been established as follows:

A. Written Comprehensive Examination should be taken by the *fourth* quarter in residence (or during the first year by students whose undergraduate major was Physics at UCLA).

B. Final written examinations in the five fundamental courses and fulfillment of the breadth requirement should be completed no later than the end of the *fifth* quarter.

C. A specialized course of study should begin during the *second* year.

D. The Comprehensive Oral Examination ("field oral") should be completed no later than the *eighth* quarter in residence.

E. The Oral Qualifying Examination (advancement to candidacy) should be completed no later than the end of the *11th* quarter.

F. The dissertation and Final Oral Examination (if required) should be finished during the *fifth* and *sixth* years.

Disqualification and Appeal of Disqualification. All graduate student record cards are reviewed at the end of each quarter. At this time examination of each student's progress in graduate study is carefully reviewed. Specific conditions which may lead to termination of graduate study are the following: (1) Failure to maintain the required grade point average of 3.0 in Physics and in all courses taken in graduate status. (2) Failure to receive the required "satisfactory" grades in the core course classes. (3) Failure to make satisfactory progress on thesis research. (This may include locating a research sponsor or making normal progress toward thesis completion once a sponsor has been located.) (4) Failure to pass the Written Comprehensive Examination by a second attempt. (A third attempt may be granted under special circumstances.) (5) Failure to pass the field oral examination. In practice, every attempt is made to help those students who may fail in any of the above catagories. Before terminating a student, the Department will meet with the student to discuss the problems at hand. In many instances, an extension of time is given to the student to rectify the problem. These cases are interpreted on an individual basis and no fixed formula applies. However, if after the designated extension of time the student has not shown the Department that satisfactory progress is being made, the student will be terminated.

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. The 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. Foundations of Classical and Quantum Mechanics. (Formerly numbered 220A.) An integrated presentation of the foundations of classical and quantum mechanics.

221A. Quantum Mechanics with Applications. Prerequisite: course 220 or consent of instructor. Quantum Mechanics with applications. Rotations and other symmetry operations, perturbation theory, scattering theory.

221B. Quantum Mechanics with Applications. Prerequisite: course 221A. Formal theory of collision processes. Introduction to relativistic quantum mechanics.

221C. Quantum Mechanics. Continuation of nonrelativistic 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.** (Formerly numbered 220B.) 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. Advanced Nuclear Physics. An advanced course in the structure of complex nuclei, nuclear models, and nuclear reactions. Normally preceded by course 224.

225B. Advanced Nuclear Physics. Nuclear beta decay, neutrino experiments, parity violation, conserved vector current theory, interaction between nucleons and the electromagnetic field.

226A-226B. Elementary Particle Physics. Prerequisites: courses 221A, 221B, 224, concurrent enrollment in 230 recommended. Relativistic kinematics and phase space. Survey of elementary particle masses and lifetimes. Quantum number determination. Relativistic S-matrix. C, P, and T invariance. Weak interaction theory; decay rate and cross section calculations. Continuous symmetries and guage theories. Electromagnetic structure of hadrons. Deep inelastic lepton scattering, SU (3); the quark model. Charm and higher symmetries; e+ e- annihilations. Theory and phenomenology of high-energy hadron-hadron collisions.

230A-230B-230C. Relativistic Quantum Theory. Quantum electrodynamics, general quantum field theory, S-matrix theory.

231A. Methods of Mathematical Physics. Students may not receive credit for both Physics 231A and Mathematics 266A. Linear operators, review of functions of a complex variable, integral transforms, partial differential equations.

231B. Methods of Mathematical Physics. Students may not receive credit for both Physics 231B and Mathematics 266B. Ordinary differential equations, partial differential equations, and integral equations. Calculus of variations.

231C. Methods of Mathematical Physics. Students may not receive credit for both Physics 231C and 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 215A, 221A and 140. 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-241C (may be taken concurrently). Many body methods in solid state physics.

243A-243K. Special Topics in Solid State Physics. A. Disordered Systems. B. Magnetic Resonance. C. Phase Transitions. D. Magnetism. E. Superconductivity. F. Macromolecules. G. Semiconductors. H. Optical Interactions. I. Non-linear Optics. J. Hopping Transport. K. 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.

269B. Seminar in Elementary Particle Physics.

***284. Advanced Laboratory in Acoustics and Cryogenics.** Selected advanced experiments in acoustics and cryogenics designed to train the student in the techniques and instrumentation used in acoustic research and low temperature physics.

290. Research Tutorial in Plasma Physics. (½ or 1 course) 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 plasma physics will be required to take three quarters of Physics 290, ordinarily during his second or third year. May be repeated for credit.

291. Research Tutorial in Elementary Particle Theory. (½ or 1 course) Prerequisites: courses 226A, 230A, and 230B. Seminars and discussion by staff, postdoctoral fellows, and graduate students enrolled in this course. Each graduate student doing research in elementary particle theory is required to take this course, ordinarily in his second or third year of study. May be repeated for credit.

292. Research Tutorial in Spectroscopy, Low Temperature, and Solid State Physics. (½ or 1 course) 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 his second or third year. May be repeated for credit.

295. Research Tutorial in Solid Earth Physics. (½ or 1 course) Seminars and discussions in solid earth physics. Each physics graduate student doing research in solid-earth physics is required to take this course, or Physics 292 if appropriate, ordinarily in his second or third year of study. May be repeated for credit.

298. Research Tutorial in Experimental Elementary Particle Physics. (½ or 1 course) Seminars and discussions 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 his second or third year. May be repeated for credit. Enrollment limited to six students.

299. Research Tutorial in Nuclear Physics. (½ or 1 course) Seminars and discussions in nuclear physics by staff and students, in both experiment and theory. Each graduate student doing research in nuclear physics is required to take this course, ordinarily during his second or third year. May be repeated for credit.

Professional Course in Method

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. This course is part of the Master of Arts, Teaching (M.A.T.) program, but is open to other interested students also.

Individual Study and Research

495. Teaching of College Physics. (½ course) Required of all new teaching assistants. Lecture with discussion. 5 or more one-hour meetings during the quarter plus intensive training week at the beginning of the Fall quarter. If necessary this may be expanded to one hour per week or longer meetings. A special course for teaching assistants designed to deal with the problems and techniques of teaching college physics. The ideas and techniques learned will be applied and evaluated in the sections of each teaching assistant. May be repeated for credit. Graded on S/U basis.

596. Directed Individual Studies. (½ to 2 courses)

597. Preparation for Master's Comprehensive Examinations and Doctoral Qualifying Examinations.

598. Master's Thesis Research and Writing.

599. Doctoral Research and Writing. (2 to 3 courses)

Physiology

(Office, 53-247 Center for the Health Sciences)

Francisco J. Bezanilla, Ph.D., *Professor of Neuoscience in Physiology.*
Allan J. Brady, Ph.D., *Professor of Physiology and Director of Graduate Studies.*
Jennifer S. Buchwald, Ph.D., *Professor of Physiology.*
Michael H. Chase, Ph.D., *Professor of Physiology in Residence.*
Sergio Ciani, Ph.D., *Professor of Physiology.*
Jared M. Diamond, Ph.D., *Professor of Physiology.*
George Eisenman, M.D., *Professor of Physiology.*
Alan D. Grinnell, Ph.D., *Director of Jerry Lewis Neuromuscular Research Center and Professor of Physiology.*
Susumu Hagiwara, M.D., Ph.D., *Professor of Physiology and Dr. Eleanor I. Leslie Professor of Neuroscience.*
Earl Homsher, Ph.D., *Professor of Physiology.*
Glenn A. Langer, M.D., *Castera Professor of Cardiology in Physiology and Medicine (Vice-Chair of the Department).*
Wilfried F.H.M. Mommaerts, Ph.D., *Professor of Physiology and Medicine and Director of the American Heart Association, G.L.A.A. Cardiovascular Research Laboratory (Chair of the Department).*
Gordon Ross, M.D., *Professor of Physiology and Medicine.*
Ralph R. Sonnenschein, M.D., Ph.D., *Professor of Physiology.*
John McD. Tormey, M.D., *Professor of Physiology.*
Bernice M. Wenzel, Ph.D., *Professor of Physiology and Psychiatry and Assistant Dean of Educational Research.*
Brian Whipp, Ph.D., *Professor of Physiology and Medicine.*
Ernest M. Wright, D.Sc., *Professor of Physiology.*
Sally Krasne, Ph.D., *Associate Professor of Physiology.*
Michael S. Letinsky, Ph.D., *Associate Professor of Physiology.*
Paul Quinton, Ph.D., *Associate Professor, Biomedical Sciences (University of California, Riverside) and UCLA Physiology.*
Oscar Scremin, M.D., *Adjunct Associate Professor of Physiology.*
Julio Vergara, Ph.D., *Associate Professor of Physiology.*
Joy Frank, Ph.D., *Adjunct Assistant Professor of Physiology.*
Richard Horn, Ph.D., *Assistant Professor of Physiology in Residence.*
Kenneth D. Philipson, Ph.D., *Adjunct Assistant Professor of Physiology.*
Douglas Junge, Ph.D., *Professor of Oral Biology and Physiology.*
Eduardo H. Rubinstein, M.D., Ph.D., *Professor of Anesthesiology and Physiology.*
Maria W. Seraydarian, Ph.D., *Professor of Nursing.*
Mary A.B. Brazier, Ph.D., D.Sc., *Emeritus Professor of Anatomy and Physiology in Residence.*
John Field, Ph.D., *Emeritus Professor of Physiology and Anatomy.*
Donald B. Lindsley, Ph.D., *Emeritus Professor of Psychology and Physiology.*

•

Jesse O. Washington, D.V.M., *Lecturer in Physiology.*

The Ph.D. Degree

Admission Requirements. Candidates for admission to graduate status in the Department of Physiology are expected to pursue the Ph.D. degree. They 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, students must have completed courses in: mathematics through calculus (equivalent to UCLA Math 31A, B, C); 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 with a strong background in areas pertinent to physiology may be admitted to graduate status, provided that essential deficiencies are removed by appropriate courses within a specified time after admission. Students may also be admitted upon 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 the student's major field. MCAT scores will be accepted in lieu of the GRE.

Three letters of recommendation are required and should be addressed to the Director of Graduate Studies.

Applications of prospective students are reviewed by the Graduate Admissions Committee. Completion of a master's program is not required.

Students should request an application packet and/or departmental brochure from: Graduate Student Office, Department of Physiology, UCLA School of Medicine, Los Angeles, CA 90024.

Advising. The Director of Graduate Studies is: Dr. Allan J. Brady, UCLA, Department of Physiology, A3-381 BRI, Los Angeles, CA 90024.

The adviser for first year graduate students is: Dr. Sally Krasne, UCLA, Department of Physiology, 53-247 CHS, Los Angeles, CA 90024.

In the first year, academic progress is evaluated by the Graduate Committee during the year, at the completion of the required coursework, and following the departmental Qualifying Examination. The Graduate Committee is responsible for the *overall* assessment of progress of the first-year students. At the end of the first year, students are given a written assessment of their progress and areas of weakness.

Upon completion of required courses, it is the student's responsibility to select a sponsor in the area of study he/she wishes to pursue.

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. Physiology 205 — Physical Chemistry of Membrane and Cellular Systems; Physiology 208 — Biophysics of Membrane Transport; Physiology 213 — Methods in Cell Physiology; Physiology 214 — Cell Physiology: Transport & Electrochemical Properties; Physiology 215 — Cellular Interactions; Physiology 230A, B, C — Selected Topics in Organ Physiology.

The Graduate Training Program consists of two levels of basic subject matter available to our students and students outside the Department. One level is comprehensive but qualitative rather than extensively analytical. The other level involves in-depth study which is rigorous and quantitative. Our first year students will have the option of taking courses at either level but will be required to take at least two areas of in-depth study.

Course requirements are based on the student's background. Prior to the beginning of formal coursework, students meet with the Graduate Committee for counseling regarding the first-year curriculum.

Written and Oral Qualifying Examinations. A departmental Written Qualifying Examination is usually taken at the end of the first year of study, although this requirement may be waived provided other methods of performance evaluation indicate satisfactory progress. Questions are solicited from the teaching staff and selected to give a comprehensive coverage of coursework offered to first-year students. Strong emphasis is placed on synthesis in the solicitation and grading of questions. The examination requires two days. 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 the students have had close association. Marginal performance in all areas with excellence in none is not considered acceptable.

Following successful completion of the departmental Written Examination, each student selects a sponsor who will act as chair of his/her doctoral committee and direct his/her thesis research project. By the completion of the second year of study, the student and his/her sponsor must have selected an additional four members for the committee, which would then total three from within the Department and two outside the Department. These five committee members conduct the Oral Examination. The purpose of the Oral Examination is to establish, to the satisfaction of the committee, that the student is capable of conducting a productive research project. At this point in his/her training, the student normally will have completed all formal coursework, will have passed the departmental Written Examination, and will have devoted approximately a year to a Research Project (either his/her own or in collaboration with his/her sponsor). It is the obligation of the committee to evaluate the ability of the student to formulate a testable question, based on a clear understanding of the current literature in his/her field and to propose a critical method of approach and analysis to the resolution of that question. At the successful completion of the Oral Examination, the student advances to candidacy and his/her committee elects whether the student will defend his/her thesis in a Final Oral Examination.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional with the doctoral committee.

Time to Degree. From admission to Written Qualifying Examination — three quarters; From admission to Oral Examination — six quarters; From admission to the approval of the dissertation prospectus (advancement to candidacy) — six quarters; From advancement to candidacy to the Final Oral Examination — six quarters; From admission to the award of the degree — usually 12 to 15 quarters (four to five years); Normative time-to-degree — 12 quarters.

Disqualification. If, at the time of the Oral Examination, there are apparent weaknesses in the student's abilities, the doctoral committee should make recommendations for remedial study or training which would correct these deficiencies. If the student is judged to be insufficiently capable of performing productive research with a reasonable amount of further training, then in fairness to the student, the University, and the scientific community, it is the obligation of the committee to recommend termination of graduate study for the student. A student may also be recommended for disqualification if he/she exceeds the normative time-to-degree and fails to show sufficient progress toward the degree.

Appeals. Appeals on matters of disqualification can be made to the Department Graduate Committee.

Other Relevant Information. The Department also offers postdoctoral training in research and welcomes students interested in concurrent M.D./Ph.D. programs.

Upper Division Courses

100. Elements of Human Physiology. (1½ courses) Prerequisite: enrollment in School of Dentistry or consent of instructor. Required course for 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 will be presented, where possible, on the basis of information relevant to oral function. Mr. Homsher and the Staff

101. Neuromuscular and Cardiovascular Physiology. (1¾ courses) 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 others 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.
Mr. Sonnenschein and the Staff

102. Renal, Respiratory and Gastrointestinal Physiology. (1½ courses) 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 metobolites by the renal and gastrointestinal systems, and the special physiology of certain organs.
Mr. Tormey and the Staff

103A-103B. Basic Neurology. Prerequisite: Medical school status or consent of instructor. Two four-hour sessions and one three-hour session per week of the last three weeks of the winter quarter; two two-hour sessions and two three-hour sessions per week in the spring quarter. Lectures, conferences, demonstrations and laboratory procedures necessary to an understanding of the function of the human nervous system. In-Progress grading. (Must be taken concurrently with Anatomy 103.) Mr. Chase, and Staff

105N. Human Physiology. Prerequisite: enrollment in the School of Nursing or consent of instructor. Required course for third year nursing students. Lecture and discussion emphasizing a correlative approach to anatomy and physiology of the human body.
Ms. Seraydarian

199. Special Studies. (¼ to 2 courses) Prerequisite: consent of instructor. Special studies in physiology, including either reading assignments or laboratory work or both, designed for appropriate training of each student who registers in this course.

Graduate Courses

200. Transport Across Biological Membranes. Prerequisite: consent of instructor. An in-depth study of transport ions, non-electrolytes and water across plasma membranes of single cells and epithelia. Lectures will include such topics as membrane structure, the passive permeability of membranes to ions and non-electrolytes, active transport of sugars and amino acids, active ion transport, and the mechanisms of water transport. Experimental work will involve 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. (1½ course) Prerequisites: Chemistry 113B and 113C or the equivalent, or 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 will be 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 to be supplemented with audio-visual materials and many references from the literature. To be offered Fall quarter. Mr. Junge

205. Physical Chemistry of Membrane and Cellular Systems. Prerequisite: consent of instructor. Survey of the principles of equilibrium and non-equilibrium thermodynamics, electrostatics and fluid mechanics, and their application to problems of electrochemistry, ionic process in solutions, electrode kinetics and transport in membranes. Mr. Ciani

207. Neurophysiology. Prerequisite: consent of instructor. Seminar and laboratory course designed to acquaint the student 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

208. Biophysics of Membrane Transport. (1½ courses) (Formerly numbered 200.) Prerequisites: Physical Chemistry (equivalent of Physiology 205 or Chemistry 110A-110B), Differential equiations (may be taken concurrently, equivalent of Physiology 201 or Mathematics 32C) or consent of instructor. Studies of transport mechanisms in simple model membrane systems are used as a basis for understanding mechanisms of ion and non-electrolyte permeation, excitability and gating phenomena in biological membranes. The significance of such physical variables as membrane surface charges, surface dipoles, dielectric constant and viscosity for transport phenomena are discussed in detail. Mr. Ciani, Ms. Krasne

212A-212B-212C. Critical Topics in Physiology. (¼ to 2 courses) 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. (1½ courses) Prerequisite: consent of instructor. The lectures and laboratory will deal with the integrated circuits and other solid-state devices employed in modern instruments, so that the students will learn to design and build many of the simpler circuits often required in their research. The emphasis will be on the particular circuits used in electrophysiology, RC analysis, and an introduction to cable theory. Mr. Bezanilla, Mr. Vergara

214. Cell Physiology: Transport and Electrochemical Properties. (½ to 1½ courses) Prerequisite: course 213 or consent of instructor. Introductory concepts of transport across cell membranes, models of permeation mechanisms, linear cable properties of cells and non linear conductance changes in excitation and impulse conduction.

215. Cell Physiology: Cellular Interaction. (1½ courses) Prerequisites: courses 213, 214. Synaptic transmission mechanisms and potential generation in the special senses receptors.

216. Cellular Electrophysiology. (1½ course) Lecture, six hours. Prerequisites: a basic knowledge of the physics of electricity, integral and differential calculus and biology equivalent to Biology 5; consent of instructor. The course presents basic concepts of membrane structure, passive cable properties, nonlinear properties of excitation and conduction and biophysics of transport phenomena. This material will be presented in semi-quantitative terms. A rigorous in-depth coverage of this material is offered in Physiology 213.

217A. A Survey of Transport Processes in Biological Membranes. Prerequisite: consent of instructor. An introduction to the transport ions, non-electrolytes and water across plasma membranes of single cells and epithelia. Lectures will include such topics as membrane structure, the passive permeability of membranes to ions and non-electrolytes, active transport of sugars and amino acids, active ion transport, and the mechanisms of water transport.

217B. Cellular Neurophysiology. Lecture, four hours. Prerequisite: course 213 or 216 or consent of instructor. Structure and function of synaptic transmission, neurotransmitters, excitation/inhibition special sensory receptors.

218A. Integrative Neurophysiology. Lecture, four hours. Prerequisite: course 217B 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. Lecture, four hours. 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. (½ to 1½ course) Prerequisite: consent of instructor. This series of courses offers in-depth study of muscle physiology with material derived from a critical review of classical and recently published research papers. In general, the content of Physiology 221A,B,C will not be the same but will be adapted to the special interests of students insofar as emphasis is concerned.

222. Graduate Commentary: Renal, Respiratory and Gastrointestinal Physiology. (½ course) Prerequisite: course 101. For graduate students. An advanced supplementation of the topics being presented in course 102.

223. Graduate Commentary: Physiology of the Nervous System. (½ course) Prerequisites: same as for course 101; consent of instructor. For graduate students. An advanced supplementation of the topics being presented in basic neurology. Ms. Buchwald

224. Permeation and Gating in Ionic Channels. Prerequisites: Physiology 225, or its equivalent; permission of instructor. This course will be an advanced level seminar on the "state of the art" in research on permeation and gating in ionic channels, both biological and artificial. Each student will present one or more seminars on a subject of his choosing, under guidance of the instructor. Mr. Eisenman

225. Molecular Aspects of Ion Permeation through Peptide Channels. Prerequisites: consent of instructor; Physiology 208 (Biophysics of Membrane Transport) unless waived. Advanced course for students well-grounded in fundamentals of membrane permeation. Covers the most recent theoretical and experimental state of the art for the molecular details of ion permeation in the well-characterized peptide channel of gramicidin as well as relevant observations in biological channels. Ten hours of reading are expected for every two hours of lecture. Mr. Eisenman

226. Bilayer Membranes. Prerequisite: consent of instructor. Advanced lectures and laboratory demonstrating physical and chemical principles that underlie the behavior of lipid bilayer membranes, both artificial and natural.

227. Theoretical Problems in Membrane Permeation. (½ course) Prerequisite: consent of instructor. Tutorial directed to specific theoretical problems of interest to the student. Mr. Ciani

228. Epithelia: Structure and Function. (½ course) Prerequisite: consent of instructor. Lectures and seminars on the physiology of epithelia cells with particular emphasis on membrane transport. Graded S/U only. Mr. Wright

229. Research Topics in Neurobiology. (½ course) Prerequisite: consent of instructor. Discussion of current literature covering research problems in neurobiology. Graded S/U. Mr. Letinsky

230A-230B-230C. Selected Topics in Organ Physiology. (1 to 2 courses) 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. In-Progress Grading. Mr. Ross and Staff

231A-231B-231C. Cardiovascular and Respiratory Physiology. (½ to 1½ courses) Prerequisite: consent of instructor. This series of courses offers in-depth study of the cardiovascular and respiratory systems. Physiology 231A will emphasize respiratory mechanisms and control. Physiology 231B and 231C will include the function and control of the cardiovascular system and its relation to the mechanics of respiration and cellular gas exchange. Study material will consist of critical reviews and discussion of selected articles in journals.

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. Grading basis: S/U or letter grade. Mr. Horn

251A-251B-251C. Seminar in Physiology. (¼ course each) Prerequisite: consent of instructor. Review and discussion of current physiological literature, research in progress, and special topics.

260. The Use of Laboratory Animals in Research. (Formerly numbered 301.) 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

Individual Study and Research

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus Instructor, Department Chairman and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Individual Study or Research. (½ to 3 courses) Prerequisite: consent of instructor.

597. Preparation for the Doctoral Qualifying Examination or the Master's Comprehensive Examination. (½ to 3 courses) Prerequisite: consent of instructor.

598. Thesis Research for Master's Candidates. (½ to 3 courses) Prerequisite: consent of instructor.

599. Dissertation Research for Ph.D. Candidates. (½ to 3 courses) Prerequisite: consent of instructor.

Political Science

(Office 4289 Bunche Hall)

Richard E. Ashcraft, Ph.D., *Professor of Political Science.*
Hans H. Baerwald, Ph.D., *Professor of Political Science.*
Richard D. Baum, Ph.D., *Professor of Political Science.*
Irving Bernstein, Ph.D., *Professor of Political Science.*
John C. Bollens, Ph.D., *Professor of Political Science.*
David T. Cattell, Ph.D., *Professor of Political Science.*
James S. Coleman, Ph.D., *Professor of Political Science.*
Mattei Dogan, Docteurés Lettres, *Professor of Political Science.*
Ernest A. Engelbert, M.P.A., Ph.D., *Professor of Political Science.*
Leonard Freedman, Ph.D., *Professor of Political Science.*
Robert C. Fried, Ph.D., *Professor of Political Science.*
Robert S. Gerstein, L.L.B., Ph.D., *Professor of Political Science.*
Edward Gonzalez, Ph.D., *Professor of Political Science*
Michael D. Intriligator, Ph.D., *Professor of Political Science and Economics.*
Malcolm H. Kerr, Ph.D., *Professor of Political Science.*
Roman Kolkowicz, Ph.D., *Professor of Political Science.*
Andrzej Korbonski, Ph.D., *Professor of Political Science.*
Michael F. Lofchie, Ph.D., *Professor of Political Science.*
Dwaine Marvick, Ph.D., *Professor of Political Science.*
Charles R. Nixon, Ph.D., *Professor of Political Science.*
David C. Rapport, Ph.D., *Professor of Political Science.*
John C. Ries, Ph.D., *Professor of Political Science.*
Ronald Rogowski, Ph.D., *Professor of Political Science.*
David O. Sears, Ph.D., *Professor of Political Science and Psychology.*
John R. Sisson, Ph.D., *Professor of Political Science (Chair of the Department).*
Richard L. Sklar, Ph.D., *Professor of Political Science.*
David O. Wilkinson, Ph.D., *Professor of Political Science.*
David A. Wilson, Ph.D., *Professor of Political Science.*
E. Victor Wolfenstein, Ph.D., *Professor of Political Science.*
Charles E. Young, Ph.D., *Professor of Political Science.*
Ciro Zoppo, Ph.D., *Professor of Political Science.*
Winston W. Crouch, Ph.D., *Emeritus Professor of Political Science.*
David G. Farrelly, Ph.D., *Emeritus Professor of Political Science.*
J.A.C. Grant, Ph.D., L.L.D., *Emeritus Professor of Political Science.*
Foster H. Sherwood, Ph.D., L.L.D., *Emeritus Professor of Political Science.*
H. Arthur Steiner, Ph.D., *Emeritus Professor of Political Science.*
L. Blair Campbell, Ph.D., *Associate Professor of Political Science.*
Douglas S. Hobbs, Ph.D., *Associate Professor of Political Science.*
Paul Jabber, Ph.D., *Associate Professor of Political Science.*
Karen J. Orren, Ph.D., *Associate Professor of Political Science.*
John R. Petrocik, Ph.D., *Associate Professor of Political Science.*
Duane E. Smith, Ph.D., *Associate Professor of Political Science.*
Leo M. Snowiss, Ph.D., *Associate Professor of Political Science.*
Steven L. Spiegel, Ph.D., *Associate Professor of Political Science.*
Arthur A. Stein, Ph.D., *Associate Professor of Political Science.*
Thad A. Brown, Ph.D., *Assistant Professor of Political Science.*
Paul B. Hammond, Ph.D., *Assistant Professor of Political Science.*
Stephen L. Skowronek, Ph.D., *Assistant Professor of Political Science.*
Robert C. Welsh, Ph.D., *Assistant Professor Political Science.*

•

James G. Fisk, B.S., *Adjunct Professor of Political Science.*
Pierre-Michel Fontaine, Ph.D., *Acting Associate Professor of Political Science.*
Marvin Hoffenberg, M.A., *Professor of Political Science in Residence.*

The Graduate Program

Admission Requirements. In addition to University minimum requirements, three letters of recommendation and the scores from the Aptitude Test of the Graduate Record Examination are required. Prospective students may write for departmental brochures to the Graduate Studies Office, Department of Political Science, UCLA, L.A., California 90024. Political Science does not have an application form in addition to the one used by Graduate Admissions.

The Department deadline for receipt of all application materials is December 31 prior to the Fall Quarter in which the student plans to register. Applicants will receive notification from the Department in the early Spring concerning their admission into the graduate program.

Financial Assistance. The fellowship-assistantship application is combined with the admissions application, and may be obtained either from the UCLA Fellowship Office or from Graduate Admissions. In order to be eligible for a fellowship, students must make sure their file is complete and be admitted to the Department of Political Science. They, therefore, should make sure that all necessary materials have reached the Political Science Graduate Office by the December 31 deadline.

Although every effort is made to provide some financial assistance to all Political Science students, there are only a limited number of fellowships available to first-year graduate students.

Teaching assistantships are awarded only to students who have been graduate students in the Department for at least one year. They are not automatically renewable and must be reapplied for each year. The Department does not ordinarily offer teaching assistantships to students who have (1) held teaching assistantships for three years in the Department or (2) held University-administered fellowships and/or teaching assistantships for four years.

Advising. The Political Science Graduate Adviser advises all departmental graduate students on any matters pertaining to the graduate program, and is responsible for approving their study lists. As soon as possible after arriving at UCLA, new students should contact the Graduate Adviser who will assist in planning their studies during the first year in residence.

Faculty submit written evaluations of students' coursework at the end of each academic quarter, and these evaluations are available to the students. Students are encouraged to request an oral evaluation of their academic work in the Department prior to taking the M.A. evaluation sequence, from the Graduate Adviser or the chair of their field examination committee.

Major Fields:

Six fields of study are offered to graduate students in the Political Science Department:

1) Political Theory
2) International Relations
3) Politics
4) Comparative Government
5) Public Law
6) Public Administration and Local Government

Graduate Studies Committee. The chairs of the Ph.D. written examination committees in the six fields, plus the Graduate Adviser (chair), constitute the Graduate Studies Committee, which acts for the Department in supervising the administration of the graduate program. Three graduate students, appointed by the Department Chair, also serve as members of this committee.

The Master of Arts Degree

Course Requirements. A student must take a minimum of five graduate courses (20 units) in Political Science at UCLA, distributed among three fields of study, and four other courses (normally in Political Science or in related subjects) to fulfill the M.A. course requirement. With the approval of the Graduate Studies Committee, two of these nine courses may be P.S. 596, but only one P.S. 596 may be applied toward the requirement of five graduate courses in Political Science. Neither the course P.S. 597 nor any lower division course may be used to satisfy any of the course requirements for the M.A. and Ph.D. degrees.

Students who have completed work in graduate standing at another institution may petition to have those courses counted as partial fulfillment of the M.A. course requirements. With the approval of the Graduate Studies Committee and the Dean of the Graduate Division, a maximum of four courses taken at another campus of the University of California may be

used to satisfy the nine courses needed for the M.A. degree, and two of these courses may be counted as part of the Department's 5-graduate course requirement. If the work was completed at an institution other than the University of California, only two courses can be applied towards the M.A. degree, and these may not be counted among the five graduate courses in Political Science. The University of California discourages duplication of advanced degrees, and persons entering the Department with an M.A. degree should therefore be aware that none of the courses taken for an M.A. degree awarded at another institution can be used to satisfy any degree requirements at UCLA.

Except for teaching assistants, all graduate students will normally take three courses per quarter prior to their completion of the M.A. and Ph.D. requirements. In some circumstances, and with the approval of the Graduate Adviser, the minimum 2-course load (8 units) may be taken. Students may offer 4 units of P.S. 597 in the quarter of their M.A. or Ph.D. examinations, as part of this 8-unit requirement, and they may also take 8 units of P.S. 597 only, once their course requirements have been met.

Thesis Plan: The Department normally requires Written and Oral Comprehensive Examinations for the M.A. degree. In exceptional cases, and with the approval of the Graduate Studies Committee, an M.A. thesis may substitute for the examination sequence.

Students are not encouraged to adopt the Thesis Plan, since it normally leads to a terminal M.A. degree. Those students wishing to do so, however, should select, in consultation with the Graduate Adviser, a faculty committee to supervise their thesis. This committee must consist of three faculty members, two from Political Science and one from another UCLA department, and must be approved by the Graduate Studies Committee. The thesis should be submitted to the thesis committee at the beginning of the student's fourth quarter in residence, and must receive the committee's approval prior to the end of that quarter. If the committee does not receive or does not approve the thesis, the student will be considered to have failed the requirement and will not be allowed to resubmit the thesis. Students adopting the thesis plan will not be allowed to continue in the Ph.D. program unless they successfully pass the M.A. Comprehensive Examination requirements described below.

M.A. Comprehensive Examination Plan. The M.A. Comprehensive Examinations consist of a written examination in one of the six fields of Political Science, and an oral examination covering the student's knowledge of Political Science in three fields (including the written examination field). The M.A. Comprehensive Examinations are administered in the Fall and Spring Quarters only, and must be taken by the end of the student's fourth quarter in residence. Individuals who enter the graduate program at UCLA with an M.A. degree in Political Science from another institution must take the M.A. examination by the end of their third quarter in residence. Students are allowed to take the M.A. Comprehensive Examinations one time only.

Prior to taking the M.A. examinations, students should have completed at least one graduate course in three of the six fields of Political Science. The M.A. written examination will be taken in the student's major field, and is graded by the Ph.D. examination committee, consisting of three faculty members in that field, appointed by the Department Chair. The M.A. examination, however, is distinct from the Ph.D. preliminary examination, and is evaluated at a different level.

The M.A. oral examination will be held as soon as possible following the M.A. written examination. The M.A. oral examination committee consists of three faculty members; the chair, who is also a member of the student's M.A. written examination committee, and two other faculty members from the two fields in Political Science in which the student has taken a graduate course. (Additionally, and for the purpose of meeting this M.A. oral examination requirement, any two courses from the P.S. 203 A-B-C series may be counted as one field.) Names of the faculty members on both the written and oral M.A. committees will be available to the students.

The M.A. oral examining committee will evaluate the student's entire record, including performance on the M.A. written and oral M.A. examinations and evaluations of coursework taken, and recommend one of the following:

a) that the student receive the M.A. degree and be encouraged to proceed toward the Ph.D.

b) that the student receive the M.A. degree (when all departmental and University requirements are met) and that his/her status as a graduate student in the Department be thereafter terminated.

c) that the student not be awarded the M.A. degree and that his/her status as a graduate student in the Department be terminated at the end of the current quarter.

Graduate students holding teaching assistantships who receive terminal M.A. degrees as a result of the examination sequence will lose the teaching assistantship effective the end of the quarter in which they complete the M.A. degree requirements. In all cases, these requirements must be fulfilled no later than the quarter following notification of termination.

Time to Degree. The normal period from graduate admission to completion of required courses and award of the M.A. degree is four quarters.

500 Series Courses. The Political Science Department offers the following courses in the 500 series:

Course No.	Unit Value	Type of Grading	Number of Times May Be Repeated
596	4	letter	no limit
597	4	S/U	no limit
598	4	S/U	no limit
599	4	S/U	no limit

One 596 course may be counted toward the 5-graduate course requirement, with approval of the Graduate Studies Committee, and two 596 courses may be counted toward the 9-course requirement for the M.A. degree, also with the committee's approval. The courses P.S. 597, 598 and 599 cannot be used for credit for any of the course requirements for either the M.A. or the Ph.D.

Disqualification and Appeal of Disqualification. A student who does not receive a recommendation to proceed to the Ph.D. program (b or c above) may appeal that decision by presenting a written request for an appeal to the chair of the M.A. oral examination committee prior to the end of the quarter in which the M.A. Comprehensive Examinations were taken. The M.A. oral committee will then review its decision, and if this appeal is not successful, the student may then appeal to the Graduate Studies Committee, which will make a final determination in the case.

The Ph.D. Degree

Admission. Successful completion of the M.A. Comprehensive Examinations in Political Science at UCLA is a prerequisite for admission to the Ph.D. program in Political Science at UCLA.

Advising. The Graduate Adviser advises all graduate students as to their general progress in meeting the requirements for the Ph.D. degree in Political Science. In addition, soon after a graduate student has passed the M.A. Comprehensive Examinations, a faculty adviser in the individual's major field will be selected by the student and approved by the Department Chair to assist the student in preparing for the Ph.D. Preliminary Examinations.

Foreign Language or Research Methodology Requirement. For the Ph.D., students must fulfill one of the following requirements:

1) *Demonstration of proficiency in one foreign language.* Ordinarily proficiency is demonstrated by passing the Educational Testing Service examination with a minimum score of 500. In other languages where no ETS examination is given, arrangements are made through the Department's Graduate Adviser and a faculty member in the appropriate language department to administer an examination which will test the student's proficiency at a level comparable to an ETS examination score of 500.

2) *Demonstration of proficiency in a research methodology.* Students are expected to complete three courses with a grade of "B" or better. Two of the courses are to be a sequence in

elementary statistics, plus P.S. 203C. Acceptable statistics classes include Math 50 A/B and Soc 210 A/B. More advanced classes in mathematics or statistics may be substituted for these statistics classes.

Students are expected to have completed this requirement prior to taking the Ph.D. Preliminary Examinations, and must complete it before they can take the University Oral Examination and be advanced to candidacy for the Ph.D.

Course Requirements. Prior to taking the Ph.D. Preliminary Examinations in three of the six fields of Political Science, a student must have completed the basic graduate courses in those fields. Each field in Political Science will specify the courses — a minimum of two — the student must take as basic preparation for the Ph.D. Preliminary Examination in that field. In addition to the minimum basic course requirements, a student must satisfy a 2-quarter research requirement in two fields of Political Science. Each field redefines its basic course or research requirements from time to time, and students should therefore consult with the Graduate Adviser regarding the specific course requirements established by the student's three Ph.D. examination fields.

Also, a student must take a minimum of two graduate courses in a fourth or writeoff field. A student will be examined in a writeoff field during the University Oral Examination. (P.S. 203 A-B-C may be counted as a writeoff field in order to meet this requirement for the Ph.D.).

Outside Fields. One of the student's four fields (three written examination fields and one writeoff field) may be outside the Department of Political Science. In consultation with the student's major adviser, the instructor with whom he/she wishes to do the work outside the Department, and the Graduate Adviser, a student can submit a written proposal to have work done in a field outside the Department counted as partial fulfillment of the Department's Ph.D. requirements. The proposal must state the substantive materials to be covered, the course program, and why the outside field is being proposed. The proposal must be signed by the student's adviser and the outside instructor, approved by the Graduate Adviser, and submitted to the Department graduate office six months in advance of the time the student expects to take the Preliminary Examinations. A minimum of three courses, including two graduate courses, must be taken in the outside field. The outside field may consist of three courses concentrated in one discipline or distributed among several disciplines other than Political Science.

The outside field may be counted as one of the three Ph.D. written examination fields or as the writeoff field. In either case, the outside instructor shall be nominated to serve on the University oral committee.

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 upon petition to the Graduate Studies Committee.

Ph.D. Preliminary Examinations. Within two years after passing the M.A. examinations, the student will take the Ph.D. Comprehensive Examinations. These will consist of a written examination in three fields, or in the field in which the M.A. written examination has been taken, a research paper may be substituted for the Ph.D. written examination in that field. Students choosing to write a research paper must submit a precis of the research paper to the appropriate field committee at least one quarter prior to their taking the Ph.D. Preliminary Examinations. The Ph.D. examinations are given twice a year, in November and in May. Students must complete all three examinations (or two examinations and a research paper) during a single examination period. No student will be allowed to proceed to the University Oral Examination until he/she has successfully passed the examinations in three fields.

Each Ph.D. candidate must fill out a form at least six months prior to taking the Ph.D. examination sequence which outlines those fields in which the student will be examined, type of examination, and courses taken to fulfill field requirements. This form must be approved by the student's chair and the Graduate Adviser, and will then be put in the student's file for future reference. Copies of this form are available in the Department Graduate Office.

A student failing one or more of the written examinations does not have the automatic right to retake the examination sequence. In no case will a student who has failed all three examinations be permitted to retake the examinations. In other instances, whether the student will be required to retake examinations, and how many examinations the student will be required to retake, will be determined by the Graduate Studies Committee. In no case will a student be allowed to take an examination a third time.

A student may appeal the evaluation of a failure on any Ph.D. written examination by presenting a written request for an appeal to the chair of the Ph.D. examination committee prior to the end of the quarter in which the Ph.D. examinations were taken. The Ph.D. field examination committee will reconsider its decision and submit its written report to the Graduate Studies Committee. If the student's appeal is not successful, he or she may appeal the case to the Graduate Studies Committee, which will make a final determination of the matter.

Ph.D. Oral Examination. Within two quarters of passing the Department's Ph.D. Preliminary Written Examinations, students must take the University Oral Examination. In the University Oral Examination the student shall be examined in each of his/her four fields, including the writeoff field, by an appropriate representative from each field, nominated by the Department Chair. If the student successfully passes the Oral Examination (and has fulfilled the foreign language requirement), he/she will then be advanced to candidacy for the Ph.D. and will be eligible to receive the C.Phil. degree.

Approval of a written dissertation by the student's doctoral committee constitutes the final requirement for the Ph.D. degree in Political Science.

Final Oral Examination Following Completion of the Dissertation. The Doctoral Committee for each candidate decides whether or not a Final Oral Examination should be required.

Time to Degree. Students are expected to complete the Ph.D. program in Political Science, including acceptance of the dissertation, within 5¼ years (16 quarters) from the time of their admission to graduate status at UCLA.

Candidate in Philosophy Degree. Students are eligible to receive the C. Phil. degree on advancement to candidacy for the Ph.D.

Disqualification. A student may be terminated at the Ph.D. level if the Ph.D. examination committees, in combination with the Graduate Studies Committee of the Department, make the decision that he or she failed the examination sequence and is not allowed to continue for the Ph.D. in Political Science at UCLA.

Appeals. Students may appeal termination by presenting a written appeal to the Graduate Studies Committee of the Department.

*Graduate Courses

General

203A-203B-C203C. Introduction to Political Inquiry.

203A. Problems of Scientific Inquiry and Normative Discourse. Mr. Nixon

203B. Major Conceptual Frameworks and Approaches to Political Science. Course 203A or its equivalent will be taken prior to 203B.

C203C. Quantitative Research Methods in Political Science. May be concurrently scheduled with Political Science C197C. An introduction to the analysis of political data. The relationships among theory, concepts, measurements, and inference will be stressed. The nature of measurement will be discussed and there will be an introduction to scaling, index construction, and the measurement of political variables. The student will become familiar with such ideas as: variables, relationships, association and correlation, controls and causal ordering. Students will be introduced to basic techniques of data collection and analysis. They will also engage in computer-aided interpretation of political data.

C204. Quantitative Applications. A survey of quantitative research techniques and their application to the study of political phenomena. May be concurrently scheduled with Political Science C102.
Mr. Marvick, Mr. Petrocik, Mr. Brown

211. Political Theory. An analysis of the central problems of political inquiry and their relation to political philosophy.

---

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

212. International Relations. An examination of contemporary theories and methodologies in international relations, with applications to contemporary international politics. Mr. Stein

213. American Foreign Policy. An examination of major contemporary problems. Mr. Zoppo

214A-214B. Survey Courses in American Politics. *Students taking MA 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. Brown, Mr. Marvick, Mr. Petrocik

214B. American Political Institutions. Mr. Orren, Mr. Skowranek, Mr. Snowiss

215A-215B. Comparative Government. Prerequisites: course 215A or consent of instructor is prerequisite for 215B. Approaches to the study of comparative politics and problems of comparative political analysis. Mr. Brown, Mr. Cattell, Mr. Rogowski, Mr. Sisson

C216. Public Law. A systematic analysis of the scope and nature of public law, with particular attention given to its materials and methods as illustrated in concepts and doctrines drawn from various of its subject fields. May be concurrently scheduled with Political Science C197E. Mr. Gerstein

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 Political Science C197F. Mr. Engelbert

C218B. Approaches to Organizational Analysis. Analysis of several of the major conceptual alternatives for the study of organizations, with emphasis given to public administrative organizations. Among the topics covered are structural-functional and systemic approaches to organization, rational-choice models, and social psychological analyses. Each alternative is critically evaluated for its strengths and weaknesses as a guide to understanding organizational analysis. May be concurrently scheduled with Political Science C197F. Mr. Ries

C218C. The Administrative System. A behavioral analysis of the processes of public administrative structures in the American political system. Emphasis on the possibilities for and limits on rational decision-making and program innovation and on the problems of maintaining public responsibility. May be concurrently scheduled with Political Science C197E. Mr. Hammond

Substantive Courses

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 Political Science C197A.

C222. Selected Topics in Political Theory. A critical examination of a major problem in political theory. May be concurrently scheduled with Political Science C197A Sec. 1.

224A-224K. Studies in Politics.

224A. Politics and Economy. An analysis of the theoretical and practical relationships between economic organization and governmental institutions. Study will include 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 men, and with the screening and sponsoring mechanisms affecting their careers and political perspectives. May be concurrently scheduled with Political Science C197C. Mr. Marvick

C224C. Politics and Society. The application of selected classical and contemporary sociological theories to politics. May be concurrently scheduled with Political Science C197C. Ms. Orren, Mr. Skowronek

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 upon the assumptions, concepts, methods, and theoretical implications associated with each approach. May be concurrently scheduled with Political Science 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 Political Science C197C. Mr. Snowiss, Ms. Orren, Mr. Skowronek

M224G. Political Psychology. (Same as Psychology M228.) Prerequisite: course 140 or 141, or 214A, or 224H, or Psychology 220A, or consent of instructor. A survey of psychological approaches to political analysis; topics include personality, small group analysis, experimental social-psychology, and cognitive psychology. 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 Political Science C197B. Mr. Brown, Mr. Petrocik

C224I. Political Parties. A critical examination of the literature on party systems and organization. Special attention will be given to political functions, electoral campaigns, and party cadres. May be concurrently scheduled with Political Science 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 Political Science C197F. Mr. Hoffenberg, Mr. Ries

228C. Political and Administrative Aspects of Planning. A study of the political constraints on and support for effective planning. To be explored are 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. Engelbert, Mr. Fried

C228D. The Federal Bureaucracy. Discussion, one hour; seminar, three hours. An examination of the formulation and implementation of policy at the federal level. The consequences of administrative performance for American political and social life will be explored. (May be concurrently scheduled with course C197F.) Mr. Hammond

C228E. State Administrative Systems. An analysis of state administrative systems, their local sub-systems, and their outputs. May be concurrently scheduled with Political Science 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 Political Science C197F. Mr. Bollens

C230. Comparative Development Administration. Discussion, one hour; seminar, three hours. An analysis of the administration of development programs and the development of administrative institutions, with special attention to ecology. Comparisons are made both between countries and within countries. May be concurrently scheduled with course C197F. Mr. Nazih Ayubi

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 will be stressed along with the analysis of policy options. May be concurrently scheduled with Political Science C197B.

C231B. Politics and Strategies of Modern War. Discussion, one hour; seminar, three hours. This course analyzes various national security problems in both their military-technical and political dimensions. It seeks to develop in some depth issues likely to be raised in Political Science 138A, which, however, is not a prerequisite. May be concurrently scheduled with course C197B. Mr. Kolkowicz

231C. International Law and Organization. This course emphasizes the role of law and organization in the conduct of contemporary international politics. International organization is considered as an integral process within the contemporary international legal system whose characteristics are explored in depth.

C231D. International Relations Theory. An introduction to contemporary problems in international relations theory. May be concurrently scheduled with Political Science C197B. Mr. Stein, Mr. Wilkinson

232. Seminar on International Political Economy. An intensive examination of various theoretical approaches to issues related to the politics of the world economy, and their application to historical and contemporary issues.

235. Selected Topics in Comparative Politics. (Formerly numbered 225.) 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. Comparative Government or Politics field credit.

236A. An introduction to the literature on the development of elective institutions and their performance. The course takes an interdisciplinary approach, emphasizing historical as well as contemporary cases and modes of analysis.

236B. Prerequisite, either 236A or consent of instructors. 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. Although emphasis will be placed upon American materials the entire English speaking world will be covered. May be concurrently scheduled with Political Science 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. The focus will be on both judicial and non-judicial materials. Mr. Hobbs

C238C. The Bill of Rights and the States. An examination of the problems surrounding the application to the states of Amendments 1-9. May be concurrently scheduled with Political Science 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 Political Science C197E. Mr. Gerstein, Mr. Welsh

Graduate Seminars

Prerequisite for all graduate seminars: advance consent of instructors.

C250A-C250L. Seminars in Regional and Area Political Studies.

C250A. Latin-American Studies. Discussion, one hour; seminar, three hours. May be concurrently scheduled with course C197D. Mr. Gonzalez

C250B. Russian and Slavic Studies. May be concurrently scheduled with Political Science C197C. Mr. Cattell, Mr. Kolkowicz, Mr. Korbonski

C250C. Chinese and East Asian Studies. May be concurrently scheduled with Political Science C197D. Mr. Baum

C250D. Japanese and Western Pacific Studies. May be concurrently scheduled with Political Science C197D. Mr. Baerwald

C250E. Seminar in African Studies. May be concurrently scheduled with Political Science C197D. Mr. Coleman, Mr. Lofchie, Mr. Sklar

C250F. Middle Eastern Studies. May be concurrently scheduled with Political Science C197D. Mr. Kerr

250G. Commonwealth Studies.

C250H. Seminar in Western European Studies. Discussion, one hour; seminar, three hours. May be concurrently scheduled with course C197D. Mr. Rogowski

C250J. Southeast Asian Studies. May be concurrently scheduled with Political Science C197D.

250K. North African Studies. Mr. Kerr

C250L. South Asian Studies. May be concurrently scheduled with C197D. Mr. Sisson

C252. Seminar in Public Law. May be concurrently scheduled with Political Science C197E.

C253. Seminar in International Relations. May be concurrently scheduled with Political Science C197B.

C254. Seminar in Public Administration. May be concurrently scheduled with Political Science C197F.

256A-256B. Seminar in Comparative Government. Prerequisite: course 256A is prerequisite to 256B.

257. Seminar in Political Theory. A multiple-term course. Grade to be given only upon completion of 257A and 257B. Mr. Ashcraft

259. Seminar in Political and Electoral Problems. Prerequisite: two graduate courses in Politics.

C262. Seminar in Municipal Government. May be concurrently scheduled with Political Science C197F. Mr. Bollens

C271. Seminar in Political Change. An interdisciplinary seminar directed toward the analysis of political change. To be offered by members of the Department of Political Science. May be concurrently scheduled with Political Science C197D.

280A-280B. Advanced Practicum in Administrative Research. Prerequisite: At least five courses (20 units) at the graduate and upper division level in political science and consent of instructor. An advanced laboratory/seminar in applied research over a two-quarter sequence on public agency operational and service delivery problems. The seminar will provide 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.

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 by students only in a quarter in which they are Teaching Assistants; cannot be used to fulfill M.A. or Ph.D. course requirements. Graded S/U.

501. Cooperative Program. (½ to 2 courses) Prerequisites: Approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chairman and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 1 course) A letter grade (A, B, C, D, or F) will be assigned by the professor supervising the study or research. May apply toward the minimum course requirement for the master's degree, and it ordinarily may be used for this requirement only once.

597. Preparation for the Comprehensive Examination for the Master's Degree or the Qualifying Examinations for the Ph.D. (½ to 2 courses) This course is ordinarily taken only during the quarter in which the student is being examined. A grade of S/U will be assigned by the Department on the basis of the student's performance in the examination(s).

598. Research for and Preparation of the Master's Thesis. (½ to 2 courses) A grade of S/U will be assigned by the professor supervising the master's thesis. (This course will rarely be taken in the Department because students normally receive their master's degree under the Comprehensive Examination Plan.)

599. Research for and Preparation of the Doctoral Dissertation. (½ to 2 courses) A grade of S/U will be assigned by the professor supervising the dissertation. There is no restriction on the number of times an individual UCG student may enroll in any of the 590 series courses.

Psychiatry and Biobehavioral Sciences

(Office of Education, B7-349 NPI)

T. George-Bidder, M.D., *Professor of Psychiatry in Residence.*
Nicholas G. Blurton-Jones, D.Phil., *Professor of Education and Behavioral Sciences.*
Norman Q. Brill, M.D., *Emeritus Professor of Psychiatry.*
[16]W. Jann Brown, M.D., *Professor of Pathology and Psychiatry.*
[16]Nathaniel A. Buchwald, Ph.D., *Professor of Biobehavioral Sciences and Anatomy in Residence.*
Dennis P. Cantwell, M.D., *Professor of Psychiatry.*
Ching-Piao Chien, M.D., *Professor of Psychiatry in Residence.*
Kenneth M. Colby, M.D., *Professor of Psychiatry.*
Alexander Comfort, M.B., D.Sc., *Adjunct Professor of Psychiatry.*
Robert H. Coombs, Ph.D., *Adjunct Professor of Biobehavioral Sciences (Sociology).*
Norman Cousins, B.A., *Adjunct Professor of Medical Humanities.*
Barbara F. Crandall, M.D., *Professor of Pediatrics and Psychiatry in Residence.*
Joseph W. Cullen, Ph.D., *Adjunct Professor of Biobehavioral Sciences (Public Health).*
[16]Jean S. deVellis, Ph.D., *Professor of Anatomy and Biobehavioral Sciences.*
[16]Wilfrid J. Dixon, Ph.D., *Professor of Biomathematics and Biobehavioral Sciences.*
Robert B. Edgerton, Ph.D., *Professor of Biobehavioral Sciences and Anthropology in Residence.*
Bernice T. Eiduson, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
[16]Samuel Eiduson, Ph.D., *Professor of Biobehavioral Sciences and Biological Chemistry in Residence.*
Barbara Fish, M.D., *Professor of Psychiatry.*
Arvan L. Fluharty, Ph.D., *Professor of Biobehavioral Sciences (Biological Chemistry) in Residence.*
Steven R. Forness, Ed.D., *Professor of Biobehavioral Sciences (Special Education) in Residence.*
[16]Joaquin M. Fuster, M.D., *Professor of Psychiatry in Residence.*
Rosslyn Gaines, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Gary C. Galbraith, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Ronald G. Gallimore, Ph.D., *Professor of Biobehavioral Sciences (Psychology) in Residence.*
[16]John Garcia, Ph.D., *Professor of Psychology and Biobehavioral Sciences.*
Walter R. Goldschmidt, Ph.D., *Professor of Anthropology and Biobehavioral Sciences.*
Roderic Gorney, M.D., *Adjunct Professor of Psychiatry.*
Milton Greenblatt, M.D., *Professor of Psychiatry, Executive Vice-Chair of the Department, Director of the Neuropsychiatric Institute Hospital and Clinics.*
Donald Guthrie, Ph.D., *Professor of Biostatistics and Biobehavioral Sciences in Residence.*
[16]John Hanley, M.D., *Professor of Psychiatry in Residence.*
Frank Hayes, M.D., *Professor of Psychiatry in Residence.*
Christoph M. Heinicke, Ph.D., *Adjunct Professor of Biobehavioral Sciences (Medical Psychology).*
Frank M. Hewett, Ph.D., *Professor of Education and Biobehavioral Sciences.*
Jean C. Holroyd, Ph.D., *Adjunct Professor of Biobehavioral Sciences (Medical Psychology).*
[16]Chester D. Hull, Ph.D., *Professor of Biobehavioral Sciences (Neurophysiology) in Residence.*
Lissy F. Jarvik, Ph.D., M.D., *Professor of Psychiatry.*
Murray E. Jarvik, M.D., Ph.D., *Professor of Psychiatry and Pharmacology.*
Harry J. Jerison, Ph.D., *Professor of Biobehavioral Sciences and Psychology in Residence.*
John G. Kennedy, Ph.D., *Professor of Anthropology and Biobehavioral Sciences in Residence.*
Hayato Kihara, Ph.D., *Adjunct Professor of Biobehavioral Sciences (Biological Chemistry).*
Arthur Kling, M.D., *Professor of Psychiatry in Residence.*
Lewis L. Langness, Ph.D., *Professor of Biobehavioral Sciences and Anthropology in Residence.*
Robert P. Liberman, M.D., *Professor of Psychiatry in Residence.*
[16]Horace W. Magoun, Ph.D., *Emeritus Professor of Anatomy and Biobehavioral Sciences.*
Judd Marmor, M.D., *Adjunct Professor of Psychiatry.*
[16]James T. Marsh, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology).*
[16]David S. Maxwell, Ph.D., *Professor of Anatomy and Biobehavioral Sciences.*
Philip R.A. May, M.D., *Professor of Psychiatry in Residence.*
[18]Michael T. McGuire, M.D., *Professor of Psychiatry.*
Ivan N. Mensh, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology).*
Milton H. Miller, M.D., *Professor of Psychiatry.*
Armando Morales, D.S.W., *Adjunct Professor of Biobehavioral Science (Social Work).*
Kazuo Nihira, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Ernest P. Noble, M.D., Ph.D., *Professor of Psychiatry.*
William H. Oldendorf, M.D., *Professor of Neurology and Psychiatry in Residence.*
[16]Edward M. Ornitz, M.D., *Professor of Psychiatry in Residence.*
Robert O. Pasnau, M.D., *Professor of Psychiatry in Residence.*
Morris J. Paulson, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
[16]Michel Philippart, M.D., *Adjunct Professor of Psychiatry, Pediatrics and Neurology.*
Dennis D. Pointer, Ph.D., *Professor of Public Health and Mental Health Administration.*

[16]George J. Popjak, M.D., *Professor of Psychiatry and Biological Chemistry.*
Douglass R. Price-Williams, Ph.D., *Professor of Biobehavioral Sciences and Anthropology in Residence.*
Richard H. Rahe, M.D., *Adjunct Professor of Psychiatry.*
Fredrick C. Redlich, M.D., *Professor of Psychiatry in Residence.*
Edward R. Ritvo, M.D., *Professor of Psychiatry in Residence.*
Alexander C. Rosen, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
[16]Robert T. Rubin, M.D., *Professor of Psychiatry in Residence.*
Paul Satz, Ph.D., *Professor of Biobehavioral Sciences (Neuropsychology) in Residence.*
[16]Richard J. Schain, M.D., *Adjunct Professor of Pediatrics, Neurology and Psychiatry.*
[16]Arnold B. Scheibel, M.D., *Professor of Anatomy and Psychiatry.*
Donald A. Schwartz, M.D., *Adjunct Professor of Psychiatry.*
[16]Eustace A. Serafetinides, M.D., Ph.D., *Professor of Psychiatry in Residence.*
David Shapiro, Ph.D., *Professor of Biobehavioral Sciences and Psychology.*
Edwin S. Shneidman, Ph.D., *Professor of Biobehavioral Sciences in Residence.*
Arthur B. Silverstein, Ph.D., *Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
James Q. Simmons, M.D., *Professor of Psychiatry in Residence.*
Paul F. Slawson, M.D., *Adjunct Professor of Psychiatry.*
S. Stefan Soltysik, M.D., Ph.D., *Professor of Biobehavioral Sciences (Neurophysiology) in Residence.*
Robert S. Sparkes, M.D., *Professor of Medicine, Pediatrics, and Psychiatry.*
M. Anne Spence, Ph.D., *Professor of Biobehavioral Sciences and Biomathematics in Residence.*
[16]Maurice B. Sterman, Ph.D., *Professor of Anatomy and Biobehavioral Sciences in Residence.*
Robert J. Stoller, M.D., *Professor of Psychiatry.*
Manuel Straker, M.D., *Adjunct Professor of Psychiatry.*
Frank F. Tallman, M.D., *Emeritus Professor of Psychiatry.*
Peter E. Tanguay, M.D., *Professor of Psychiatry in Residence.*
George Tarjan, M.D., *Professor of Psychiatry.*
Charles W. Tidd, M.D., *Emeritus Professor of Psychiatry.*
J. Thomas Ungerleider, M.D., *Professor of Psychiatry in Residence.*
Jaime R. Villablanca, M.D., *Professor of Biobehavioral Sciences (Neurophysiology) in Residence.*
[16]Richard D. Walter, M.D., *Professor of Neurology and Psychiatry.*
[16]Bernice M. Wenzel, Ph.D., *Professor of Physiology and Biobehavioral Sciences.*
[16]Louis Jolyon West, M.D., *Professor of Psychiatry (Chair of the Department).*
[16]Charles D. Woody, M.D., *Professor of Anatomy and Psychiatry in Residence.*
Ralph E. Worden, M.D., *Adjunct Professor of Psychiatry.*
Joe Yamamoto, M.D., *Professor of Psychiatry in Residence.*
[16]Arthur Yuwiler, Ph.D., *Professor of Biobehavioral Sciences (Biological Chemistry) in Residence.*
Anthony M. Adinolfi, Ph.D., *Associate Professor of Anatomy and Biobehavioral Sciences.*
Christiane A. M. Baltaxe, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Linguistics).*
Linda J. Beckman, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Annette M. Brodsky, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
[16]Warren S. Brown, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Stephen D. Cederbaum, M.D., *Associate Professor of Psychiatry and Pediatrics in Residence.*
V. Charles Charuvastra, M.D., *Associate Professor of Psychiatry.*
Milton S. Davis, Ph.D., M.D., *Adjunct Associate Professor of Psychiatry.*
Michael E. Dawson, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Psychology).*
Javier I. Escobar, M.D., *Associate Professor of Psychiatry in Residence.*
Frederick D. Frankel, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Betty Jo Freeman, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Steve J. Funderbark, M.D., *Associate Professor of Psychiatry in Residence.*
[16]Edward Geller, Ph.D., *Associate Professor of Biobehavioral Sciences (Biological Chemistry) in Residence.*
Robert H. Gerner, M.D., *Associate Professor of Psychiatry in Residence.*
Irene T. Goldenberg, Ed.D., *Adjunct Associate Professor of Biobehavioral Sciences (Educational Psychology).*
Frederick Gottlieb, M.D., *Adjunct Associate Professor of Psychiatry.*
Victor Haddox, J.D., *Adjunct Associate Professor of Psychiatry.*
Donald F. Haggerty, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Biological Chemistry).*
Angelos E. Halaris, M.D., *Associate Professor of Psychiatry.*
Kay R. Jamison, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Joseph R. Jedrychowski, D.D.S., *Associate Professor of Dentistry, Pediatrics, and Biobehavioral Sciences.*
Sheldon H. Kardener, M.D., *Adjunct Associate Professor of Psychiatry.*
Marvin Karno, M.D., *Associate Professor of Psychiatry in Residence.*
Keith T. Kernan, Ph.D., *Associate Professor of Biobehavioral Sciences (Anthropology) in Residence.*
Lewis M. King, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Psychology).*
Melvin Lansky, M.D., *Adjunct Associate Professor of Psychiatry.*
[16]Henry Lesse, M.D., *Associate Professor of Psychiatry in Residence.*
Michael S. Levine, Ph.D., *Associate Professor of Biobehavioral Sciences (Neuroanatomy) in Residence.*
Edward H. Liston, M.D., *Adjunct Associate Professor of Psychiatry.*
Lars B. Lofgren, M.D., *Adjunct Associate Professor of Psychiatry.*
Gayle G. Marsh, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Charles P. McCreary, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Jim Mintz, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Paul R. Munford, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Gloria J. Powell, M.D., *Associate Professor of Psychiatry in Residence.*
Kiki V. Roe, Ph.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Marian D. Sigman, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Shih Y. Tsai, M.D., *Adjunct Associate Professor of Psychiatry.*
Alexander J. Tymchuk, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Mario Valente, M.D., *Adjunct Associate Professor of Psychiatry.*
Theodore Van Putten, M.D., *Adjunct Associate Professor of Psychiatry.*
Thomas Weisner, Ph.D., *Associate Professor of Biobehavioral Sciences and Anthropology in Residence.*
William J. Winslade, Ph.D., J.D., *Adjunct Associate Professor of Biobehavioral Sciences (Medical Psychology).*
Gail E. Wyatt, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Joel Yager, M.D., *Associate Professor of Psychiatry in Residence.*
Joel P. Abrahams, Ph.D., *Assistant Professor of Biobehavioral Sciences (Psychology) in Residence.*
Joan R. Asarnow, Ph.D., *Associate Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Robert F. Asarnow, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Nenita C. Belen, M.D., *Adjunct Assistant Professor of Psychiatry.*
Murray A. Brown, M.D., *Adjunct Assistant Professor of Psychiatry.*
Sherrel G. Butcher, Ph.D., *Assistant Professor of Pharmacology and Biobehavioral Sciences.*
Gabrielle A. Carlson, M.D., *Assistant Professor of Psychiatry in Residence.*
Stephen B. Connor, M.D., *Adjunct Assistant Professor of Psychiatry.*
Edward M. DeMet, Ph.D., *Adjunct Assistant Professor of Biobehavioral Sciences (Biochemistry).*
Robert P. Diamond, M.D., *Assistant Professor of Psychiatry in Residence.*
Stephen E. Dubin, D.O., *Assistant Professor of Psychiatry in Residence.*
Fawzy I. Fawzy, M.D., *Assistant Professor of Psychiatry in Residence.*
Yvonne B. Ferguson, M.D., *Assistant Professor of Psychiatry in Residence.*
Billy W. Floyd, M.D., *Adjunct Assistant Professor of Psychiatry.*
Thomas R. Garrick, M.D., *Assistant Professor of Psychiatry in Residence.*
David A. Gorelick, M.D., *Assistant Professor of Psychiatry in Residence.*
Eric Halgren, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Richard L. Heinrich, M.D., *Adjunct Assistant Professor of Psychiatry.*
Peter B. Hirsch, M.D., *Assistant Professor of Psychiatry in Residence.*
Estelle T. Hughes, M.D., *Assistant Professor of Psychiatry in Residence.*
Louis E. Jenkins, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Jerry A. Kasdorf, Ph.D., *Adjunct Assistant Professor of Biobehavioral Sciences (Medical Psychology).*
Ramzi Z. Kiriakos, M.D., *Assistant Professor of Psychiatry in Residence.*
Asenath LaRue, Ph.D., *Assistant Professor of Biobehavioral Sciences (Psychology) in Residence.*
Ira M. Lesser, M.D., *Assistant Professor of Psychiatry in Residence.*
Keh-Ming Lin, M.D., *Assistant Professor of Psychiatry in Residence.*
Fred Loya, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Stephen R. Marder, M.D., *Assistant Professor of Psychiatry in Residence.*
Barringer D. Marshall, M.D., *Adjunct Assistant Professor of Psychiatry.*
Keith Nuechterlein, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Charles E. Olmstead, Ph.D., *Assistant Professor of Biobehavioral Sciences (Physiological Psychology) in Residence.*

Kenneth A. Parker, J.D., Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Leonora K. Petty, M.D., *Assistant Professor of Psychiatry in Residence.*
David E. Powles, M.D., *Adjunct Assistant Professor of Psychiatry.*
Robert S. Pynoos, M.D., *Assistant Professor of Psychiatry in Residence.*
Robert L. Ross, M.D., *Adjunct Assistant Professor of Psychiatry.*
Andrew T. Russell, M.D., *Assistant Professor of Psychiatry in Residence.*
Steven L. Schultz, M.D., *Assistant Professor of Psychiatry in Residence.*
Jerome M. Siegel, Ph.D., *Assistant Professor of Biobehavioral Sciences (Psychology) in Residence.*
Ethel S. Simmons, M.D., *Adjunct Assistant Professor of Psychiatry.*
Esther Sinclair, Ph.D., *Assistant Professor of Biobehavioral Sciences (Psychology) in Residence.*
Stanley E. Slivkin, M.D., *Assistant Professor of Psychiatry in Residence.*
James Spar, M.D., *Assistant Professor of Psychiatry in Residence.*
Gordon D. Strauss, M.D., *Assistant Professor of Psychiatry in Residence.*
Michael A. Strober, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Jimmie L. Turner, Ph.D., *Assistant Professor of Biobehavioral Sciences (Anthropology) in Residence.*
Lewis Van Osdel, M.D., *Adjunct Assistant Professor of Psychiatry.*
David K. Wellisch, Ph.D., *Assistant Professor of Biobehavioral Sciences (Medical Psychology) in Residence.*
Kenneth B. Wells, M.D., *Assistant Professor of Psychiatry in Residence.*
A. Preston West, M.D., *Assistant Professor of Psychiatry in Residence.*
Jeffrey N. Wilkins, M.D., *Assistant Professor of Psychiatry in Residence.*
Jocelyn Whiten, Ph.D., *Assistant Professor of Biobehavioral Sciences (Neurosciences) in Residence.*
Vincent P. Williams, Ph.D., *Adjunct Assistant Professor of Biobehavioral Sciences (Biological Chemistry).*
Dean L. Wolcott, M.D., *Assistant Professor of Psychiatry in Residence.*

•

Janice E. Abarbanel, M.A., *Associate.*
Barnett Addis, Ph.D., *Academic Administrator.*
Nancy H. Allen, M.P.H., *Associate in Health Education.*
Linda Andron, M.S.W., *Adjunct Lecturer in Social Work.*
Balbir Bajwa, M.A., *Visiting Lecturer.*
Barbara A. Bass, M.S.W., *Adjunct Lecturer in Social Work.*
Diane J. Bass, M.S.W., *Adjunct Lecturer in Social Work.*
Carole L. Bender, M.S.W., *Adjunct Lecturer in Social Work.*
M. Christine Benson, M.D., *Visiting Lecturer in Psychiatry.*
Jane C. Burroughs, M.S.W., *Adjunct Lecturer in Social Work.*
J. Alfred Cannon, M.D., *Visiting Lecturer in Psychiatry.*
Rebecca S. Cox, M.A., *Demonstration Teacher.*
L. Jeannette Davis, D.S.W., *Adjunct Lecturer in Social Work.*
William E. Donnelly, M.S.W., *Adjunct Lecturer.*
Angela Farrell, M.S.W., *Adjunct Lecturer.*
[redacted] Ferjo, M.A., *Demonstration Teacher.*
Florence Frisch, M.S.W., *Adjunct Lecturer in Social Work.*
Marielle C. Fuller, *Adjunct Lecturer in Psychiatry.*
Charlotte B. Gelb, M.S.W., *Adjunct Lecturer in Social Work.*
Jean S. Gitelson, B.S., *Adjunct Lecturer in Clinical Psychology.*
Gloria Gluskin, M.S.W., *Visiting Lecturer in Social Work.*
Tracy A. Goodglick, B.A., *Demonstration Teacher.*
Mary Lou Gottlieb, M.S.W., *Adjunct Lecturer in Social Work.*
Scott Harris, M.A., *Visiting Lecturer in Psychology.*
Carrie Jacobs, Ph.D., *Adjunct Lecturer.*
Dennis T. Jaffe, Ph.D., *Visiting Lecturer in Biobehavioral Sciences (Medical Psychology).*
Joan E. Johnson, M.S.W., *Adjunct Lecturer in Social Work.*
Martha B. Jura, Ph.D., *Adjunct Lecturer in Psychology.*
Charles V. Keeran, M.S.W., *Adjunct Lecturer in Mental Hospital Administration.*
Tom L. Kennon, M.S.W., *Adjunct Lecturer in Social Work.*
Ronald N. Kornblum, M.D., *Visiting Lecturer in Psychiatry.*
Katherine J. LaMotte, Ed.D., *Adjunct Lecturer.*
Linda J. Lewis, M.Ed., *Demonstration Teacher.*
Barbara E. Linden, M.A., *Demonstration Teacher.*
Donald F. Lomas, M.S.W., *Associate in Social Work.*
Myrtle Mandiberg, M.A., *Adjunct Lecturer in Psychology.*
Donald L. Mayhew, Ph.D., *Demonstration Teacher.*
Miriam A. Meyer, M.S.W., *Adjunct Lecturer in Social Work.*
Helga M. Muller, M.A., *Specialist.*
Natalie R. Newman, M.A., *Demonstration Teacher.*
Hindy Nobler, M.S.W., *Visiting Lecturer in Social Work.*
Anderson W. Pollard, M.S.W., *Adjunct Lecturer in Social Work.*
Pearl Rapp, M.S.W., *Adjunct Lecturer in Social Work.*
V. Ellen Richey, M.A., *Demonstration Teacher.*
Judith W. Ross, M.A., *Adjunct Lecturer.*
Catherine Sammons, M.S.W., *Adjunct Lecturer in Social Work.*
Olga Samuel, M.S.W., *Adjunct Lecturer in Social Work.*
Breena T. Satterfield, M.S.W., *Visiting Lecturer in Social Work.*
Marjorie C. Schuman, Ph.D., *Visiting Lecturer.*
Elizabeth Shima, M.S.W., *Adjunct Lecturer in Social Welfare.*
Maryellen Sparkes, M.S., *Specialist.*
Cynthia Telles, M.A., *Adjunct Lecturer in Medical Psychology.*
Sherry Terzian, M.S., *Associate Librarian.*
Frank J. Trankina, Ph.D., *Adjunct Lecturer in Biobehavioral Sciences (Medical Psychology).*
Bertha B. Unger, M.A., *Adjunct Lecturer in Nursing.*
Sheila T. Vaughan, Ed.D., *Demonstration Teacher.*
Paul Von Blum, J.D., *Adjunct Lecturer.*
Ruth A. Waldron, M.S.S., *Adjunct Lecturer in Social Work.*
Claire Weiner, M.S.W., *Adjunct Lecturer in Social Work.*
Lillian L. Weitzner, M.S.W., *Visiting Lecturer in Social Work.*
Joyce Will, M.S.W., *Visiting Lecturer in Social Work.*
Rhonda Zusman, M.S., *Visiting Lecturer in Rehabilitation Medicine.*

The Master of Social Psychiatry (M.S.P.)

The Master of Social Psychiatry program is not admitting new students at this time. Graduate courses are offered by the Department which students in other degree programs can take on an elective basis.

*Graduate Courses

200. Colloquium on Biobehavioral Sciences. (¼ course) Prerequisite: consent of instructor. The colloquium establishes a vehicle for continuing education on recent advances in various scientific fields relevant to behavior in its biobehavioral and biosocial contexts. It provides 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. (Same as Neuroscience M201A-M201B-M201C.) Prerequisites: consent of instructor; admission to M201B requires completion of M201A; admission to M201C requires completion of M201A-M201B. The course is divided into three quarters. The fall quarter is introductory and focuses on the development of behaviors within different species and the functional uses of behaviors. An evolutionary biological perspective is used as the framework for the fall quarter. The winter quarter focuses on research studies designed to take into account the functional behavior of animals. The spring quarter focuses on special questions of interest to students. Mr. Eiduson, Mr. McGuire

207. Hypnosis Seminar. (½ course) Prerequisites: training in psychotherapy, education in psychodynamics and psychopathology, and consent of instructor. Experiential seminar with guided reading and training in inductions, anesthesia, age regression, imagery techniques, distortion of time and space, therapeutic applications (including direct symptom removal, behavioral methods and hypnoanalysis), and training patients for self-hypnosis. Emphasis is on developing skill for application in clinical practice. Graded S/U. Ms. Holroyd

208A-208B-208C. Clinical Neuropsychology: Assessment of Brain Damage. (½ course each) Prerequisites: graduate or post-graduate standing and consent of instructor. The aim of the course is to introduce and review 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 the use of neuropsychological test instruments. The Fall quarter focuses on fundamentals of neuropsychology and the assessment of brain damage in adults. The second quarter reviews the effects of brain damage in children and child neuropsychological assessment. The third quarter is devoted to the neuropsychological assessment of particular patient groups; e.g., the elderly, the epilepsies and dyscontrol syndromes. Mr. Marsh, Ms. Marsh

209A-209B-209C. Behavior Therapy Practicum. (½ course each) Prerequisite: consent of instructor. The behavior therapy practicum provides instruction and supervision in the behavioral treatment of a variety of problems presented by adult outpatients. These include anxiety, affective, conversion, obsessive-compulsive, psychosexual and eating disorders. By means of a lecture-workshop approach, trainees learn behavioral analysis and assessment, personal effectiveness training, systematic and vivio desensitization, contingency contracting and management, and cognitive behavior modification. Mr. Munford

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.This course may be repeated for credit. Mr. Kennedy, Mr. Langness

223. MMPI Seminar. (¼ course) Prerequisite: consent of instructor. Topics covered include: 1) basic scales, 2) a theory of the Minnesota Multiphasic Personality Inventory (MMPI) (and psychopathology in general) based on two-factor conditioning and physiologic substrata, and 3) code types and their transference and treatment indications. Mr. Caldwell

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

224. Seminar on Aging and Psychopathology. (½ course) Prerequisite: consent of instructor. The format will be a combination of patient interviews and case discussions. Students will review and discuss pertinent literature in gerontology and geriatrics, including psychology, sociology, clinical medicine, pharmacology, neurology, and psychiatry. The course will include a survey of psychopathology as seen among the aged, including a discussion of OBS, affective disorders and schizophrenia spectrum disorders. Ms. Jarvik, Mr. Straker

225. Diagnostic Evaluation of Psychopathology. (¼ course) Prerequisite: consent of instructor. The course focuses on recent empirical and methodological advances in clinical psychiatric diagnosis. Lecture presentations and discussion will center on the major syndromes of psychopathology in adolescence and adulthood, their distinguishing symptomatology, course and etiologic correlates, and methods for obtaining reliable judgments of a patient's current psychiatric status. Mr. Strober

226A-226B. Childhood Schizophrenia Research Seminar. (½ course) Prerequisite: consent of instructor. Current research in the causes and behavioral manifestations of childhood schizophrenia. Discussion on diagnosis and etiology of childhood schizophrenia will be included.
Mr. Frankel, Mr. Tanguay

227. Electroencephalography (EEG) in Psychiatry. (½ course) Prerequisite: consent of instructor. A survey of EEG and evoked potential (EP) methods and research into human mental function, with particular attention to EEG and EP correlates of various neuropsychological disorders of adults and children.
Mr. W. Brown

228. Behavioral Medicine. (½ course) 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 is stressed.
Mr. McCreary, Mr. Munford, Mr. Shapiro

229A-229B. Family Therapy Seminar (A-West). (¼ course each) Prerequisites: assignment to Ward A-West and consent of instructor. Course includes an overview of the types of families seen in family therapy, a discussion of various techniques and treatment approaches, and case productions to integrate the theoretical material with actual family situations.
Ms. Stock, Ms. Bass

230. Confucius and Asian Americans. Prerequisite: consent of instructor. The seminar will focus on the cultural aspects relevant to the treatment of Asian Americans. The philosophical teachings of Confucius will be discussed. Similarities and differences among Asian Americans and relevant clinical issues will be presented. Graded S/U. Mr. Yamamoto, Mr. Chien

231. Hispanics and Mental Health. (½ course) Prerequisite: consent of instructor. Course will highlight 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 bio-psychosocial behavior; distinguishing psychodynamic from cultural factors in the treatment of the Spanish-speaking patients; treatment of Hispanic families, couples, undocumented persons and criminal justice system clientele. Mr. Morales

232A-232B-232C. Human Sexual Dysfunction. (½ course 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

M233. Alcoholism and Drug Abuse Among Women. (Same as Public Health M293.) Prerequisite: consent of instructor. Discussion of the psychosocial aspects of abuse of alcohol and other drugs among women. Topics will include etiology, prevention, treatment, hormonal influences, and the role of the family. Emphasis will be placed upon current theoretical perspectives and research findings. Ms. Beckman

234A-234B-234C. Affective Disorders. (¼ course each) Prerequisites: graduate standing and consent of instructor. Seminar will cover general topics related to the primary affective disorders (depression, manic depressive illness) including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. Ms. Jamison

M235. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Anthropology M236Q and Education M222.) Lecture, three hours. Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings will be taught, emphasizing field training and practice in observing behavior. Some of the uses of observations and their implications for research in the social sciences will also be discussed. Students will be expected to integrate observational work into their current research interests. This course may be repeated for credit.
Mr. Gallimore, Mr. Levine, Mr. Turner, Mr. Weisner

236A-236B-236C. Psychology Interns' Seminar. (¼ course each) Prerequisite: consent of instructor. Current topics in clinical psychology. The group will select topics for discussion pertaining to psychopathology, diagnostic evaluation and modalities of treatment. S/U grading. Ms. Holroyd

CM237. Theoretical Issues in Disorders of Language Development. Introduction to the field of language disorders of children. The course will deal primarily with 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 will be examined. Such questions as the relationship of cognition to linguistic ability will be considered. Concurrently scheduled with Psychiatry CM135 and Linguistics CM135. Graduate students will be expected to apply more sophisticated knowledge and produce a research paper of greater depth. Ms. Needleman

238. Language Development, Cognition and Thought in Atypical Children. (¼ course) Lecture, one hour; discussion, one-half hour. Prerequisite: consent of instructor. Specific problems in language development will be considered with particular regard to their implications for differential diagnosis. The relationship between language and cognition and the issue of thought disorder in children will be addressed. Ms. Needleman

M239. Psychopharmacology. (Same as Pharmacology M239.) Prerequisite: consent of instructor. A presentation of the effects of drugs upon behavior with special attention to drugs used in psychiatry and drug seeking behavior. Physiological and biochemical mechanisms underlying such actions will be analyzed. Reports on relevant current research will be made. Mr. Jarvik

240A-240B-240C. Assessment and Treatment of Afro-American Families. (¾ course each) Prerequisites: graduate standing and consent of instructor. The course 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 a supervised evaluation and case management with an Afro-American child and family.
Ms. Bass, Ms. Powell, Ms. Wyatt

241A-241B-241C. Observation of Group Psychotherapy. (½ course each) Prerequisite: consent of instructor. Principles of adult psychotherapy will be explored through observation of an on-going group, lectures and discussion. Major theoretical emphasis will be on humanistic-group dynamic approaches.
Mr. Rosen

242A-242B-242C. Child Psychotherapy Seminar. (¼ course each) Prerequisite: consent of instructor. During the Fall and Winter quarters, videotaped diagnostic and treatment sessions of children and their families will 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. During the Spring quarter, the theory and principles of psychoanalytic work with parents will be offered. Focus in order to amplify clinical and theoretical issues.
Mr. Heinicke

243A-243B-243C. Mental Retardation Interdisciplinary Core Curriculum. (¼ course each) 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. Mr. Tymchuk, Mr. Cantwell

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. The course is directed toward providing the student with a broad general understanding of applications and limitations of computers. Specific examples are drawn from clinical, research, and administrative applications within the Mental Retardation and Child Psychiatry Program. Mr. Guthrie, Mr. Hull

245A-245B. Psychological Assessment of the Preschool Child. Prerequisite: consent of instructor. Lecture, 1½ hours; testing, two hours. This course will focus on the psychological assessment of the preschool child. Specific emphasis will be placed on the assessment of children with developmental disabilities and children who are generally thought to be "untestable." The course will have a practical orientation. The course will involve two hours per week of supervised testing. Psychiatry 245A is a prerequisite of Psychiatry 245B. S/U grading. Ms. Freeman

M246. Psychological Aspects of Mental Retardation. (Same as Psychology M246.) Prerequisite: consent of instructor. Discussion of the psychological aspects of mental retardation to include: classification, description, etiology, theory, prevention, treatment, assessment, modern and future developments, and input from other disciplines (ethics, law, religion, welfare systems). Mr. Tymchuk

247A-247B-247C. Neurophysiological and Neuropsychological Bases of Mental Retardation and Human Development. (¼ course each) Prerequisites: graduate standing and consent of instructor. Involves 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 occurs during and after presentation.
Mr. Levine, Mr. Buchwald

248. Research Rounds in Mental Retardation and Developmental Disabilities. (¼ course) Prerequisite: consent of instructor. Monthly session will consist of presentation of a patient and discussion of research approaches relevant to that patient. Staff members from various disciplines and invited speakers will participate. Mr. de Vellis

249A-249B. Language Disorders of Childhood. (¾ course each) Prerequisite: consent of instructor. Course reviews language disabilities in children, their relationship to normal maturational patterns and to other aspects of behavior, the critical period hypothesis, universals of language development, environmental factors affecting language acquisition, neural mechanisms underlying speech and language, diagnostic methods, and approaches to remedial language training. Ms. Baltaxe

250. Introduction to the Principles and Techniques of Mammalian-Cell Culture. (½ course) Prerequisites: graduate or medical student status and consent of instructor. This course provides a background in the physiology and biochemistry of mammalian cells through lecture and selected readings in the classical field. Designed to be taken concurrently with 251. Mr. Haggerty

251. Laboratory Exercises in the Techniques of Mammalian-Cell Culture. Prerequisites: graduate or medical student status and consent of instructor. This course 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. Designed to be taken concurrently with Psychiatry 250. Mr. Haggerty

252. Clinical Child Psychiatry. (¼ course) Prerequisite: consent of instructor. Weekly seminars covering the basic clinical aspects of child psychiatry. Assigned readings are presented by students and used as a basis for discussion of a particular topic. Topics covered include interviewing of parents and children, diagnosis in child psychiatry, and the clinical child psychiatric syndrome. Mr. Cantwell

253. Seminar: Child Development. (¼ course) Prerequisite: consent of instructor. The seminar is divided into three sections: theories of development, systems of child development, and chronological aspects of child development. Presentation of assigned readings by the student plays a major role in each of the seminar sessions. Mr. Cantwell

M254. Counseling Families of Handicapped Children. (½ course) (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

256. Basic Clinical Child Psychopathology. (¼ course) Prerequisite: consent of instructor. Weekly seminars covering the basic clinical aspects of child psychopathology. Readings will be provided for a basis of discussion on topics including interviewing of parents and children, diagnosis, and related syndromes. Mr. Cantwell

257A-257B-257C. Diagnostics and Therapeutics of Language Disabilities. (¾ course each) Prerequisite: consent of instructor. This course is directed toward the language specialist seeking training in the developmental disabilities of language. The course includes training in diagnostic techniques and therapy approaches. Linguistic disabilities are placed within the framework of total behavior. The clinical practicum includes individual case supervision, a review of the pertinent literature, and a discussion of research topics. Students are required to complete a clinical research project in psycho- and neurolinguistics. Ms. Baltaxe

259. Legal and Ethical Issues in Developmental Disabilities. (¾ course) Prerequisite: consent of instructor. Discussion of current laws in mental retardation/developmental disabilities, philosophies, ethics, ethical codes, issues, how to resolve them, videotape, discussion of cases. Mr. Tymchuk

M261. Seminar on Law, Medicine and Human Values. (¾ course) (Same as Law M533; formerly numbered M261A-261B.) Prerequisite: consent of instructor. The seminar will deal with legal, philosophical and psychological issues arising in the context of the doctor-patient relationship. Emphasis will be placed upon an analysis of the value conflicts underlying and manifested in medical practices and legal policies. Course material will be taken from legal, medical, and philosophical literature, legislation, case law, and medical case histories. Mr. Winslade

M262. Law and Psychiatry. (¾ course) (Same as Law M325.) Prerequisite: consent of instructor. Introduction to the ethical and legal implications of the orientation, premises, functioning, and potential contributions of psychiatry. Review of the practical and theoretical aspects of collaboration between law and psychiatry. Mr. Winslade

264. Biofeedback: Theory, Research, and Clinical Application. (½ course) Prerequisites: 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

265. Mind and Brain in Evolution. (½ course) Prerequisite: consent of instructor. This course reviews the fossil evidence on the organic evolution of the brain and the implications of that evidence for the evolution of mind and intelligence. Quantitative approaches are emphasized. Although some implications for cognitive psychology and individual differences are considered, the evolutionary analysis is "above the species level." Mr. Jerison

266. Psychophisiological Research. Prerequisite: consent of instructor. Advanced seminar and discussion of ongoing laboratory research. Issues include concepts, experimental design, measurement, and data analysis. Current topics are biofeedback, conditioning, and behavioral control of automatic functions, regulation of physiological and subjective reactions to stress and pain, and the evaluation of clinical biofeedback methods. Mr. Shapiro

271. Ethology of Motivation and Conditioning. Basic facts and concepts of motivation and learning in animals will be presented in the framework of ethological and neurophysiological approach. Classical and instrumental conditioning procedures will be discussed with particular attention to the motivational variables. Mr. Soltysik

M272. Psychological Anthropology. (Same as Anthropology M234Q.) Lecture, three hours. Prerequisite: consent of instructor. The course will deal with various psychological issues in anthropology, both theoretical and methodological. Areas of interest will include such things as culture and theory, culture and personality and culture psychiatry. The course will deal with questions relating to symbolic and unconsciousness process as they are related to culture. Particular topics will change from quarter to quarter and the course can be repeated for credit. Mr. Kennedy, Mr. Langness

273. Growth Control, Transformation, and Malignancy in Mammalian Cells in Culture. (¾ course) Evaluation of currently available cultured mammalian-cell types as experimental models to study growth control in normal, nonmalignant cells in vivo and to analyze the cytosocial, biochemical and cytophysiologic differences between normal and transformed and/or malignant cells in culture. Mr. Haggerty

274. Neurophysiology and Behavior. (¾ course) Prerequisites: graduate standing and consent of instructor. The course will provide an analysis of strategies and approaches used to study behavior of mammalian organisms. Special emphasis will be placed on recent developments in electrophysiological recording techniques in behaving animals and how such developments relate to classical concepts of brain function. Mr. Hull, Mr. Levine

275A-275B. Sociobiology Seminar. (½ course each) Prerequisite: consent of instructor. The course is designed to review in detail sociological theory as it applies to adult bonding behavior: kin-selection theory, reciprocal altruism theory, mate selection theory, and bond strategy theory. Bonds are viewed primarily from a biological rather than a psychological perspective. In-progress grading. Mr. McGuire

276. Consultation to Sex Education Programs in the Elementary School. (½ course) Prerequisites: graduate standing and consent of instructor. This seminar will focus on issues of consultation program development and evaluation of sex education for elementary school children and parents. It will offer participants the opportunity to observe behavior of and interact with normal children within the school setting. Ms. Meyer, Ms. Wyatt

277. From Research to Practice: Biobehavorial Contributions. (½ course) 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. Prerequisite: consent of instructor. Directed research experience at the graduate level. Research skills will be taught in the practical setting of ongoing psychopharmacology research projects. Discussion of ongoing psychopharmacology research projects and of proposed new projects focusing on practical problems, design, methodology, procedures and instrumentation. Mr. May

M279A-279B-279C. Seminar: Selected Topics in Human Ethology. (Same as Education M281A-281B-281C and Anthropology M229A-229B-229C.) Ethologists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter will cover one level of analysis: describing and recording behavior; causation; development; especially longitudinal studies; adaptation; evolutionary origins. Mr. Blurton-Jones

M280. Alcohol and Drug Abuse. (¾ course) (Same as Public Health M292) Prerequisite: consent of instructor. Alternative models of alcohol and other drug addictions will be examined and implications assessed for public policy regarding their control. Prevention efforts and findings from California and national surveys will be considered, with primary emphasis upon alcohol use and abuse. Ms. Beckman

281. Behavioral Therapy in an Educational Setting. (¾ course) Prerequisite: consent of instructor. The course will provide supervised experience in a classroom working with exceptional children. Theoretical background will be furnished through a one-hour weekly lecture. Ms. Richey

282. Schizophrenia: A Developmental Perspective. (½ course) Prerequisite: consent of instructor. The course will review research on the transmission of schizophrenia. Emphasis will be placed 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. An emphasis will be placed on studies of children at risk for schizophrenia. Mr. Asarnow

283. Theories of Childhood Psychosis. (¼ course) Prerequisite: consent of instructor. The aim of the course is to present the biological and neurophysiological theories of the etiology of childhood psychosis. Mr. Tanguay

265A-285B-285C. Advanced Family Therapy. (¾ course each) Prerequisite: consent of instructor. Theories and techniques of family therapy. History, foundations, and indications and contraindications for family therapy and diagnosis. Observations and demonstrations will be included. Students are encouraged to bring videotapes of their family therapy cases for discussion. Ms. Goldenberg

286. Behavioral Analysis of Autism. (½ course) (Formerly numbered 486.) Prerequisite: consent of instructor. Seminar on the role of operant techniques in the assessment, treatment and understanding problems of autism and mental retardation. Mr. Frankel, Ms. Freeman

287. Psychopharmacology Seminar. (½ course) Prerequisite: consent of instructor. A discussion of ongoing research in the area of psychopharmacology, Emphasis will be on smoking and other drug-related habits. Topics include initiation, maintenance, and cessation of habits. Basic mechanisms will be stressed. Psychological procedures used in habit development and control, particularly coping methodology, will be discussed. Mr. Jarvik

288. The Psychologist as an Expert Witness. (¼ course) (Formerly numbered 488.) Prerequisite: consent of instructor. The course will examine critical issues regarding the role of psychologists in the adversary system. Issues discussed will be criminal responsibility, competency, and other issues where law and psychology overlap. Mr. McCreary

290. Quantitative Analysis of Ethnographic Data. Prerequisite: graduate standing. The course will provide didactic and experiental 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

298. Current Topics in the Biobehavioral Sciences. (½ to 1 course) Prerequisite: consent of instructor. Current issues in the biobehavioral sciences will be offered on a selective basis depending upon 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. (¼ course) Prerequisite: consent of instructor. Discussion of basic and applied research issues related to childhood psychosis by a series of speakers. Readings will be suggested for each topic. Mr. Frankel

403. Individual Case Supervision. (¼ to 1 course) Prerequisites: consent of instructor and Department Chair. One-to-one supervision of individual therapy cases. Includes analyses of patient data, supervision of ongoing treatment, informal didactic sessions on personality theory, and applications to patient management. Consent is based on a written proposal to be structured by instructor and student prior to enrollment. Additional information and proposal forms are available in the Office of Education, B7-349 NPI.

404. Group Therapy. (¼ course) Prerequisite: consent of instructor.

Section 1: Gestalt. Experiential and didactic seminar in Gestalt therapy and other humanistic group models. Case consultations are included when relevant.

Section 2: Dynamic Experience. This group experience has as its primary goal the attainment of significant usable insight by the trainee into his/her personality and attitudes so that his/her emotional conflicts will not interfere with his/her functioning as an effective group therapist. Will provide insights into how groups affect people and people affect groups — to help groups function more efficiently. Mr. Yager

413. Community Meeting (2-West). (¼ course) Prerequisites: assignment to Ward 2-West and consent of instructor. One hour course is devoted to individual experience in leading a large group of all patients and staff. Leadership is by rotation. A half-hour process didactic session follows. Mr. Pynoos

414. Emergency Treatment Attending Rounds. (¼ course) Prerequisites: assignment to Emergency Treatment Unit and consent of instructor. Cases seen in the emergency room during the preceding night are reviewed by a consultant and the Emergency Treatment staff. Assessment techniques, methods of intervention and alternate modes of treatment are explored. Mr. Slawson

416. Treatment Planning Meetings. (¼ course) Prerequisite: consent of instructor. The course focuses on treatment and management problems posed by inpatient psychiatry. Clinical psychopathology, treatment plans and interdisciplinary skills are discussed. The emphasis is 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.).

Section 1: 2-West — Mr. Pynoos
Section 2: 2-South — Mr. Gerner
Section 3: A-South — Ms. Ferguson
Section 4: A-West — Ms. Carlson

424. Ward Milieu Meeting. (¼ course) Prerequisite: consent of instructor. Milieu course meetings are designed to explore experientially and didactically the multiple aspects of group process on a psychiatric inpatient ward.

Section 1: A-South — Ms. Ferguson
Section 2: A-West — Ms. Carlson
Section 3: 2-West — Mr. Pynoos

425. Child Pre-Admission, Admission and Disposition Conference. (¼ course) Prerequisite: consent of instructor. Child pre-admission is the case study of child and family prior to inpatient admission. Course deals with 1) interview techniques, 2) suitability for admission, and 3) goals for hospitalization. Admission and disposition includes presentation of problem cases, usually with combined physical and intellectual defects, for interdisciplinary problem solving.

Section 1: A-South — Ms. Ferguson
Section 2: A-West — Ms. Carlson
Section 3: 4-West — Ms. Petty
Section 5: 6-West — Ms. Miller

426. Psychology Interns' Psychosomatic Liaison Case Conference. Prerequisite: consent of instructor. Psychology interns' case conference of psychosomatic aspects of physical illness. Cases will be discussed with regard to management issues, psychotherapy issues, methods of psychodiagnosis, counter transference and relevant literature. In addition, participants will receive individual supervision on a weekly basis. Mr. Wellisch

429. Child Outpatient Team. (¼ course) 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. Graded S/U.

Section 1: First Year Child Fellows. Mr. Cantwell
Section 2: Second Year Child Fellows. Mr. Simmons, Mr. Tanguay, Mr. Tarjan
Section 3: Second Year Residents. Mr. Yager
Section 4: Second Year Residents. Mr. Yager
Section 6: UAF Trainees. Mr. Tymchuk

445. Family Therapy Seminar for Clinicians. (½ course) Prerequisites: prior clinical responsibility and treatment experience with individuals or families and consent of instructor. Conceptual and practical issues of family development and treatment are presented in the seminars. The emphasis is on structural family therapy. Alternative models may be reviewed during the year. Videotape is used extensively. Case supervision will be available. Participants must be treating one or more families. Mr. Gottlieb

446. Structural Family Therapy. (¼ course) Prerequisites: prior clinical experience in family therapy and consent of instructor. Intensive focus is on structural family treatment. Direct clinical experience is the primary mode of learning, with the student presenting videotape material for discussion and observing experienced clinicians' videotapes critically. The seminar/discussion format is used extensively. Mr. Gottlieb

462A-462B-462C. Advanced Mental Health Consultation. Prerequisite: consent of instructor. This course provides knowledge of children in schools through: 1) field experience; 2) a didactic program; 3) group supervision. Each trainee chooses 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

471. Child Psychiatry Grand Rounds. Prerequisite: consent of instructor. Each month one clinical subdivision of the Mental Retardation and Child Psychiatry Program presents a major clinical problem. Senior faculty discussants preside. The presenting trainees are expected to cover the pertinent literature and to assemble the critical elements of information on the case or problem at hand.

Mental Retardation and Child Psychiatry Staff

M472A-M472B-M472C. Nursing Care of the Developmentally Disabled. (Same as Nursing M410A-M410B-M410C.) Prerequisite: enrollment in the Master's Program in School of Nursing. Study of the handicapping conditions of childhood and their effects upon the child and his/her family. This course combines didactic material and supervised clinical experience. Focus is on prevention, systematic assessment, planning, implementation and evaluation of nursing care. During the final quarter the student participates in the assessment, planning and delivery of health care to the developmentally disabled in the community. Ms. Savino

475. Developmental Disabilities Clinic. Prerequisite: consent of instructor. Follow-up clinic for children with development disabilities. Services and teaching involve genetic counseling, educational and behavioral assessment, school consultation and family child guidance. Mr. Funderburk and the Staff

477A-477B. Advanced Family Therapy Seminar for Clinicians. (½ course each) Prerequisite: consent of instructor. Alternative and derivative models to structural family therapy are critically reviewed by the seminar group; e.g., family sculpting, network therapy, various communication models, issues of cotherapy, etc. Problem cases may be presented by the enrollees, including ethical dilemmas in family therapy. This course is required for first-year fellows and is an elective for experienced clinicians. Mr. Gottlieb

478. Clinical Genetics Rounds. Prerequisites: medical graduate and consent of instructor. Weekly clinical rounds on patients seen on 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 is presented. Ms. Crandall

479. Genetics Clinic Presentation. Prerequisite: consent of instructor. A weekly clinical teaching session on the patients seen in the preceding Genetics Clinic. An in-depth discussion on the genetics of each disorder follows. Ms. Crandall and the Genetics Staff

480. Analysis of Human Chromosome Studies. (¼ course) Prerequisite: consent of instructor. Chromosome karyotypes prepared in the cytogenetics laboratory during the preceding week are 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. Prerequisites: premedical course or biochemistry and consent of instructor. A weekly session in which amino acid chromatography carried out during the preceding week is presented. Teaching concerns the interpretation of abnormal chromatograms together with the technical aspects of the tests used. Mr. Cederbaum

482A-482B-482C. Psychology Intern's Group Process. (¼ course each) Prerequisite: consent of instructor. The purpose of this course is to teach the students about group processes and dynamics. The course will involve 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 Seminars. Prerequisites: introductory course and 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 are encouraged. *Genetics Staff*

596P. Individual Studies in Psychiatry. (½ to 3 courses) Prerequisites: consent of instructor and Department Chair. Consent is based on a written proposal outlining the course of study. The proposal is to be structured by instructor and student at time of initial enrollment. Directed individual research and study in psychiatry at the graduate level. Additional information and course proposal forms are available in the Office of Education, B7-349 NPI.

Mr. Tymchuk

Psychology

(Office, 1283 Franz Hall)

Bruce L. Baker, Ph.D., *Professor of Psychology.*
Peter M. Bentler, Ph.D., *Professor of Psychology.*
Robert A. Bjork, Ph.D., *Professor of Psychology.*
William E. Broen, Jr., Ph.D., *Professor of Psychology (Vice Chair of Graduate Affairs).*
[16]Larry L. Butcher, Ph.D., *Professor of Psychology.*
[16]Edward C. Carterette, Ph.D., *Professor of Psychology.*
James C. Coleman, Ph.D., *Professor of Psychology and Education.*
Barry E. Collins, Ph.D., *Professor of Psychology.*
Andrew L. Comrey, Ph.D., *Professor of Psychology.*
[16]Gaylord D. Ellison, Ph.D., *Professor of Psychology.*
Seymour Feshbach, Ph.D., *Professor of Psychology (Chair of the Department).*
Morton P. Friedman, Ph.D., *Professor of Psychology (Vice Chair of Undergraduate Affairs).*
John Garcia, Ph.D., *Professor of Psychology and Psychiatry.*
Harold B. Gerard, Ph.D., *Professor of Psychology.*
Michael J. Goldstein, Ph.D., *Professor of Psychology.*
Patricia M. Greenfield, Ph.D., *Professor of Psychology.*
Barbara A. Henker, Ph.D., *Professor of Psychology.*
Nancy M. Henley, Ph.D., *Professor of Psychology and Director of Women's Studies Program.*
Eric W. Holman, Ph.D., *Professor of Psychology.*
John P. Houston, Ph.D., *Professor of Psychology.*
Marion Jacobs, Ph.D., *Adjunct Professor of Psychology.*
Wendell E. Jeffrey, Ph.D., *Professor of Psychology.*
Harold H. Kelley, Ph.D., *Professor of Psychology.*
[16]Franklin B. Krasne, Ph.D., *Professor of Psychology.*
[16]John C. Liebeskind, Ph.D., *Professor of Psychology.*
O. Ivar Lovaas, Ph.D., Litt.D., *Professor of Psychology.*
Millard C. Madsen, Ph.D., *Professor of Psychology.*
Irving Maltzman, Ph.D., *Professor of Psychology.*
Albert Mehrabian, Ph.D., *Professor of Psychology.*
Charles Y. Nakamura, Ph.D., *Professor of Psychology.*
[16]Donald Novin, Ph.D., *Professor of Psychology.*
Amado M. Padilla, Ph.D., *Professor of Psychology.*
Allen Parducci, Ph.D., *Professor of Psychology.*
Bertram H. Raven, Ph.D., *Professor of Psychology.*
David O. Sears, Ph.D., *Professor of Psychology and Political Science.*
Joseph G. Sheehan, Ph.D., *Professor of Psychology.*
Gerald H. Shure, Ph.D., *Professor of Psychology and Sociology.*
Stanley Sue, Ph.D., *Professor of Psychology.*
James P. Thomas, Ph.D., *Professor of Psychology.*
Bernard Weiner, Ph.D., *Professor of Psychology.*
J. Arthur Woodward, Ph.D., *Professor of Psychology.*
Richard Centers, Ph.D., *Emeritus Professor of Psychology.*
S. Carolyn Fisher, Ph.D., *Emeritus Professor of Psychology.*
Joseph A. Gengerelli, Ph.D., *Emeritus Professor of Psychology.*
Milton E. Hahn, Ph.D., *Emeritus Professor of Psychology.*
F. Nowell Jones, Ph.D., *Emeritus Professor of Psychology.*
George F.J. Lehner, Ph.D., *Emeritus Professor of Psychology.*
Donald B. Lindsley, Ph.D., Sc.D., *Emeritus Professor of Psychology and Physiology.*
Jessie L. Rhulman, Ed.D., *Emeritus Professor of Psychology.*
Eliot H. Rodnick, Ph.D., *Emeritus Professor of Psychology.*
John P. Seward, Ph.D., *Emeritus Professor of Psychology.*
Marion A. Wenger, Ph.D., *Emeritus Professor of Psychology.*
Howard S. Adelman, Ph.D., *Associate Professor of Psychology and Lecturer in Education.*
Arthur P. Arnold, Ph.D., *Associate Professor of Psychology.*
Richard P. Barthol, Ph.D., *Associate Professor of Psychology.*
[16]Jackson Beatty, Ph.D., *Associate Professor of Psychology.*
Elizabeth L. Bjork, Ph.D., *Associate Professor of Psychology.*
Patrice L. French, Ph.D., *Associate Professor of Psychology.*
Jacqueline D. Goodchilds, Ph.D., *Adjunct Associate Professor of Psychology and Associate Research Psychologist.*
Gerald M. Goodman, Ph.D., *Associate Professor of Psychology.*
Constance L. Hammen, Ph.D., *Associate Professor of Psychology.*
Donald G. MacKay, Ph.D., *Associate Professor of Psychology.*
Dennis J. McGinty, Ph.D., *Adjunct Associate Professor of Psychology and Associate Research Anatomist.*
George E. Mount, Ph.D., *Associate Professor of Psychology.*
Hector F. Myers, Ph.D., *Associate Professor of Psychology.*
L. Anne Peplau, Ph.D., *Associate Professor of Psychology.*
Shelley E.Taylor, Ph.D., *Associate Professor of Psychology.*
Thomas D. Wickens, Ph.D., *Associate Professor of Psychology.*
Eran Zaidel, Ph.D., *Associate Professor of Psychology.*
Paul R. Abramson, Ph.D., *Assistant Professor of Psychology.*
Felipe Castro, Ph.D., *Assistant Professor of Psychology.*
Andrew Christensen, Ph.D., *Assistant Professor of Psychology.*
Halford H. Fairchild, Ph.D., *Assistant Professor of Psychology.*
Ralph E. Geiselman, Ph.D., *Assistant Professor of Psychology.*
Barbara Hayes-Roth, Ph.D., *Adjunct Assistant Professor of Psychology.*
Vickie M. Mays, Ph.D., *Assistant Professor of Psychology.*
Sigrid R. McPherson, Ph.D., *Adjunct Assistant Professor of Psychology and Medical Psychology and Assistant Research Psychologist.*
Nancy L. Rader, Ph.D., *Assistant Professor of Psychology.*
D. Dean Richards, Ph.D., *Assistant Professor of Psychology.*
Perry W. Thorndyke, Ph.D., *Adjunct Assistant Professor of Psychology.*
Armand A. Alkire, Ph.D., *Associate Clinical Professor of Psychology.*
Joseph A. Angelo, Ph.D., *Associate Clinical Professor of Psychology.*
Marcelline M. Burns, Ph.D., *Assistant Research Psychologist in Psychology and Engineering.*
Matthew W. Buttiglieri, Ph.D., *Clinical Professor of Psychology.*
Darrell C. Dearmore, M.A., *Lecturer in Psychology.*
Jeri A. Doane, *Assistant Research Psychologist and Adjunct Assistant Professor of Psychology.*
Mary-Lynn Doscher, Ph.D., *Assistant Research Psychologist.*
Gary Faltico, Ph.D., *Associate Clinical Professor of Psychology.*
Norma D. Feshbach, Ph.D., *Professor of Education and Psychology.*
Ronald Fisher, Ph.D., *Visiting Lecturer in Psychology.*
John T. Friar, Ph.D., *Assistant Clinical Professor of Psychology.*
Louis F. Friedman, Ph.D., *Lecturer in Psychology.*
Pamela C. Freundl, Ph.D., *Lecturer in Psychology.*
Rosslyn Gaines, Ph.D., *Professor of Medical Psychology and Psychology in Residence.*
Kenneth Gerber, Ph.D., *Assistant Clinical Professor of Psychology.*
Beverly Golden, Ph.D., *Associate Clinical Professor of Psychology.*
Thomas C. Greening, Ph.D., *Clinical Professor of Psychology.*
Robert L. Gunn, Ph.D., *Associate Clinical Professor of Psychology.*
William S. Hansen, Ph.D., *Assistant Professor of Psychology in Residence.*
Judith Halama, Ph.D., *Assistant Clinical Professor of Psychology.*
Morris K. Holland, Ph.D., *Adjunct Lecturer in Psychology.*
Catharina T. Hoppenbrouwers, Ph.D., *Assistant Research Psychologist.*
John P. Houlihan, Ph.D., *Lecturer in Psychology.*
George J. Huba, Jr., Ph.D., *Lecturer in Psychology and Assistant Research Psychologist.*
Harrington V. Ingham, M.D., *Senior Physician Diplomate in Student Health Service and Associate Clinical Professor of Psychiatry and Psychology.*
Harry J. Jerison, Ph.D., *Professor of Medical Psychology and Psychology in Residence.*
Paula B. Johnson, Ph.D., *Assistant Research Psychologist.*
Renee L. Kaplan, Ph.D., *Associate Clinical Professor of Psychology.*
George G. Katz, Ph.D., *Associate Clinical Professor of Psychology.*
Ronald Kendis, Ph.D., *Visiting Lecturer in Psychology.*
Adam T. Kohler, Ph.D., *Assistant Clinical Professor of Psychology.*
John R. Levee, Ph.D., *Associate Clinical Professor of Psychology.*
John H. Lyman, Ph.D., *Professor of Engineering and Psychology.*
Gerardo Marin, Ph.D., *Assistant Research Psychologist.*
Dennis McGinty, Ph.D., *Adjunct Associate Professor of Psychology.*
Jim Mintz, Ph.D., *Adjunct Lecturer in Psychology.*
Wilbur E. Morley, Ph.D., *Lecturer in Psychology.*
Herbert A. Moskowitz, Ph.D., *Associate Research Psychologist.*
Leslie Navran, Ph.D., *Clinical Professor of Psychology.*
Michael D. Newcomb, Ph.D., *Assistant Research Psychologist.*
Robert A. Niemann, Ph.D., *Assistant Research Engineer.*
Philip Oderberg, Ph.D., *Clinical Professor of Psychology.*
Ruben Orive, Ph.D., *Visiting Lecturer in Psychology.*
Kenneth R. Pfeiffer, Ph.D., *Lecturer in Psychology and Engineering.*
Kenneth S. Pope, Ph.D., *Adjunct Lecturer in Psychology.*
Frank Risch, Ph.D., *Clinical Professor of Psychology.*
Bruce D. Rubenstein, Ph.D., *Associate Clinical Professor of Psychology.*

Barbara N. Schaeffer, Ph.D., *Associate Clinical Professor of Psychology.*
David Shapiro, Ph.D., *Professor of Medical Psychology and Psychology.*
Satanand Sharma, Ph.D., *Assistant Research Psychologist in Psychology and Engineering.*
Jack E. Sherman, Ph.D., *Adjunct Lecturer in Psychology.*
Edwin S. Shneidman, Ph.D., *Professor of Psychology, Sociology, and Thanatology in Residence.*
Manuel J. Smith, Ph.D., *Assistant Clinical Professor of Psychology.*
Zanwill Sperber, Ph.D., *Clinical Professor of Psychology.*
Michael Stevenson, Ph.D., *Assistant Research Psychologist.*
Robert J. Strandberg, Ph.D., *Assistant Research Psychologist.*
Jill Waterman, Ph.D., *Adjunct Associate Professor of Psychology.*
Kathryn L. West, Ph.D., *Associate Clinical Professor of Psychology.*
Joseph A. Wingard, Ph.D., *Adjunct Assistant Professor of Psychology.*
Marijana B. Weiner, Ph.D., *Assistant Research Psychologist.*
William J. Wong-McCarthy, Ph.D., *Assistant Research Psychologist.*
Kenneth Ziedman, Ph.D., *Assistant Research Psychologist in Psychology and Engineering.*

Graduate Program

The Department offers the Ph.D. degree, and the student 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, all students are required to obtain thorough grounding in research methodology and psychological theory. Major specialized training is available in the areas of psychology listed below under *Major Fields or Subdisciplines.*

Admission Requirements

Admission to the Ph.D. program normally requires an undergraduate degree in psychology. However, students from other areas (particularly from the mathematical, physical, biological, and social sciences) may be admitted if their interests and abilities are compatible with the Department's graduate program. Students are admitted to the program, during Fall Quarter only and on a full-time basis only. Applicants must mail the following documents directly to the Psychology Department by December 30 to be considered for admission the following Fall:

a. The departmental Application for Admission to the Doctoral Program. This can be obtained from 1285 Franz Hall.

b. Three letters of recommendation.

c. One official transcript from each college attended.

d. Scores from the Graduate Record Examination (GRE) Aptitude Test and the Advanced Test in Psychology. The Advanced Test scores should be no older than three years. There is no penalty incurred by students retaking the GRE.

e. An official score report of the Miller Analogies Test. Foreign students or U.S. students currently overseas are exempt from this requirement.

Students who are being considered as finalists to the Clinical program may be required to meet with the Clinical faculty for an interview. Exemptions from this requirement are made by the Clinical Admissions Director on a case-by-case basis.

A departmental brochure describing the graduate program in Psychology may be obtained from 1285 Franz Hall. Incoming students are expected to have had (1) a course in statistics (UCLA equivalent: Psychology 41); (2) two courses from among learning (Psychology 110), physiological (Psychology 115), and perception (Psychology 120); and (3) two courses from among the following alternatives: (a) personality (Psychology 125) or abnormal (Psychology 127); (b) developmental (Psychology 130); and (c) social (Psychology 135). Students who have not had training in these areas will be asked to remedy deficiencies by taking appropriate coursework or examinations. In addition, it is recommended that students 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 upon satisfactorily clearing undergraduate deficiencies by the end of the fourth quarter in residence.

Advising

Each student applies, and is accepted into, one of the departmental areas (described below).

Students are assigned individual faculty advisers with whom they are required to meet each quarter, to receive study list approval.

Students are evaluated quarterly while satisfying Core Program requirements, a period of time expected to span over four quarters. The evaluations are conducted by the Graduate Evaluation Committee.

Major Fields or Subdisciplines

Students may major in Clinicial, Cognitive, Developmental, Learning and Behavior, Measurement and Psychometrics, Personality, Physiological, or Social Psychology. With the exception of Clinical, students can minor in any of the areas listed above, as well as in Industrial. Students may petition for individualized minors or a minor in Experimental Psychopathology. Training is also available in Community Psychology.

Foreign Language Requirement

Competence in one of the following foreign languages is required of students in the area of Measurement and Psychometrics: French, German, Italian, Spanish, or Russian. In other areas, students' faculty advisers also have the right to require one or more foreign languages. Students may petition to substitute a series of three or more quarter courses in another department for one of the languages, provided that these courses impart a relevant research skill.

Course Requirements

General Course Requirements. All students, regardless of area, must fulfill the following requirements:

Students must complete the Core Program within the first four quarters in residence. The Core Program includes four core courses, Psychology 250AB and 251AB (and C, if an additional quarter is needed to complete the course).

Requirements for the M.A. degree are nine graduate courses (36 units), including 250AB, 251AB (Research project must be complete), and three of the four required core courses. Two 596 courses (8 units total) 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, students must complete at least one individual research course (596) and at least three second-year graduate courses, including one quantitative course chosen from the following: 238, 247A, 249, 252, 253, 254, 255, 256, 257, 258, 259, 287.

During the third year, students must enroll in a minimum of three graduate level courses, plus one quarter of 596. At least one quarter of 596 or 599 should be taken during the fourth year and each remaining year in the graduate program.

Major Area Course Requirements. Each area requires certain courses of students majoring in that area. These requirements are as follows: *Clinical:* 270ABC; 271ABC, at least two courses in the 272 series, the area's 2-quarter assessment course, and at least two other advanced clinical courses outside the 272 series. *Cognitive:* 260AB, plus two courses chosen from 261, 262, 263, and 264. *Developmental:* 240; one course chosen from 220A, 235, and 286; one course chosen from 200B, 261, 262, 263, 264 or three modules of 205; three courses chosen from 241, 242A, 242B, 242E, 243AB, or 244. In addition to the quantitative courses listed under second year requirements above, Developmental majors must take an additional quantitative course selected from the same list. *Learning and Behavior:* 200AB, plus two courses from 204C, 204D, 208, 210, 281, 293, and Psychiatry 271. *Measurement and Psychometrics:* 249, 252, 253, 254, 255, and other measurement courses which are regularly offered. *Personality:* 232, 235, 239, 278, and one course chosen from 233 or 234. Personality majors may not be taken in combination with a psychopathology or counseling minor. *Physiological:* 205 (all modules), three quarters of 212, two approved physiological seminars, and Anatomy 206AB. *Social:* 220AB, 223 or 224, and three social seminars taught by three different faculty members.

Minor Area Course Requirements. The student must select two minor areas. These minors are normally satisfied by taking three to

four specified courses. See departmental bulletins sor further details.

Qualifying Examinations. The Qualifying Examination consists of three separate portions. The first is a standardized examination which is administered by the major area and which examines in breadth the student's knowledge of the major field. The second part is an individualized examination which examines in depth the student's knowledge of his or her area of specialization within the major field. The third part is the Oral Qualifying Examination. All Ph.D. requirements listed above must be completed before this portion can be taken.

The specific requirements of the various areas are as follows:

Clinical: The standardized examination takes the form of written and oral examinations administered at the end of the first and second years, respectively.

Cognitive and Learning and Behavior: The standardized and individualized sections are combined into one examination, based on an approved program of study. The student either takes an 8-hour written examination or writes a paper. In either case, an oral examination may be required.

Developmental: The standardized section is based on an approved program of study. The student has the option of taking a 3-hour written examination or writing three essays.

Measurement/Psychometrics and Social: The standardized examination is a 3-hour written examination which is based on a reading list provided by the area, or alternatively (in the measurement area) on a reading list proposed by the student and approved by the area.

Personality: For the standardized section, the student may either write three essays or take a 3-hour examination based on reading and question lists provided by the area.

Physiological: The standardized requirement may be met in any one of three ways: (1) by written examination based on a question list and/or reading list provided by the area (a higher level of proficiency is expected if a question list is provided than if only the reading list is provided); (2) by essays on three well-separated topics in the area; or (3) by an approved program of study; evaluation is either by a 3-hour written examination or by essays (usually three).

Practicum and Internship Requirements for Clinical Students

(a) *At least* six quarters of approved supervised preinternship practicum (Psychology 401 — 12 to 15 hours/week). A concentrated summer practicum can be used to meet a portion of this requirement. (During the second and third years, the practicum experiences would thus generally total a *minimum* of 432-576 hours per year, in addition to research experiences with clinical populations.)

(b) 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. This can be taken in the fourth or fifth year, or after most of the research for the Ph.D. is completed. In exceptional circumstances, the well-prepared student may begin the internship in the third year. The prerequisites for the internship assignment are the satisfactory completion of Psychology 401, the departmental Comprehensive Qualifying Examinations, and the minor requirements. The second half-time, as well as the full-time internship assignment, should normally be taken after the doctoral dissertation prospectus has been approved.

Doctoral Committees. In addition to the requirements imposed by the Graduate Council, the three members of the doctoral committee who are from the Psychology Department must represent at least two different areas.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is required of all candidates for the Ph.D. degree.

Time to Degree. Full-time students in Clinical Psychology are expected to complete the Ph.D. program in 18 quarters. All other students are expected to complete the degree within 15 quarters. The dissertation must be filed within three years following the completion of the Oral Qualifying Examination. Students who do not meet this requirement must take the Qualifying Examination over again.

Candidate in Philosophy Degree. Students are eligible to receive the C.Phil. degree upon advancement to candidacy for the Ph.D.

Disqualification and Appeal of Disqualification. Any student who receives two grades of B− or one grade of C+, C or F is subject to termination. Area committees may also recommend termination because of problems such as unsatisfactory performance in coursework or on qualifying examinations. In the case of Clinical students, termination may be recommended because of unsatisfactory professional skills or aptitudes.

A recommendation for disqualification is open for appeal to the Chair of the Department. Students who have not completed all requirements for the Ph.D. degree by the end of seven calendar years after admission to the program are subject to dismissal. This rule is enforced by the Graduate Affairs Committee.

Fellowships, Scholarships, Assistantships and Stipends. A number of teaching and research assistantships, departmental traineeships, and University fellowships are available. Financial aid and work-study awards are also available.

Psychology Clinic

The Psychology Clinic in the Department of Psychology is a training and research center in clinical psychology. It has specialized facilities for the investigation, assessment and treatment of a variety of psychological disabilities and adjustment problems of children, adolescents and adults.

The Clinic provides a broad range of psychological services to clients including individual, group and family therapy, behavior modification procedures and consultation to agencies in the community. The concern of the clinic with systematic investigation leading to new knowledge and the improvement of clinical psychological procedures is in keeping with a primary function of a University-based clinic. There are a number of research programs in the clinic which reflect the current interests of the staff, such as 1) communication patterns in the family relevant to both the development and the amelioration of behavioral disturbance, 2) the development of innovative techniques which are effective in treating various psychological problems and, 3) exploration of new modes of delivering psychological services to unserved segments of the population.

Such service and research functions are basic to the professional education and training of clinical psychologists.

Fernald Clinic and Laboratory

Established in 1921, this research and training center is one of the oldest, ongoing University-based facilities focusing on psycho-educational problems. In pursuing its research and training objectives, Fernald offers a variety of services, e.g., assessment, classroom instruction, psychotherapy, and tutoring. The present population consists of children, adolescents, and adults of average or better intelligence who are experiencing learning and related psychobehavioral problems.

Research activity is directed toward analysis of causal factors and processes mediating intervention efficacy. The facility also provides a general research resource to faculty and university students in psychology and other fields.

Training opportunities include extensive clinical and research practicum and internship placements and brief participation and observations scheduled in conjunction with seminars in various departments.

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. Supported by the National Institute of Mental Health, the SSMHRC provides an interdisciplinary research environment for scholars, students, and professionals interested in Hispanic mental health. The SSMHRC through its Clearinghouse Division publishes monographs, occasional papers, and the Hispanic Journal of Behavioral Sciences. It also maintains a computer-based bibliography to facilitate access to the literature in this field. The SSMHRC also supports students as research assistants. Research projects currently under way include

studies on acculturation and ethnicity, psychological assessment, health, bilingualism, community mental health, social psychology, socialization practices, and the role of the family.

*Graduate Courses

200A. Animal Learning and Behavior. This course will focus on basic principles and characteristics of learning and behavior, including Pavlovian conditioning, instrumental learning and species specific behavior. The Learning and Behavior Staff

200B. Human Learning and Behavior. Topics to be covered 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 will be placed on systematic desensitization of anxiety states, behavior modification programs for schizophrenic children and adults, behavioral pharmacology, control of autonomic behavior, among others.
The Learning and Behavior Staff

204A-204B. Seminar in Critical Problems in Learning. (Formerly numbered 204C-204D.) May be taken independently and in any order. Critical problems will be drawn from such as 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 covered include the orientating reflex, dominant focus, classical conditioning and their implications for the psychophysiology of psychopathology and psychotherapy.
Mr. Mautzman

204B. Theories of Learning. Prerequisite: Psychology 200A or equivalent. Critical discussion of the major theories in learning and their current status.

***1205A-205B. Physiological Correlates of Behavior.** Prerequisites: course 115 or equivalent and consent of instructor. 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.
The Physiological Staff

***1206. 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

***1208. Seminar in Comparative Psychobiology.**
Mr. Arnold

***1210. Comparative Psychobiology.** Prerequisites: course 115 or equivalent and 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. (¼ course) Prerequisite: course 205 or consent of instructor. Papers of current interest will be presented by members of the seminar and their significance and methodology discussed and criticized in depth. Course may be repeated for credit. Physiological Staff

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. The Social Staff

221. Seminar in Attitude Formation and Change. Prerequisite: courses 220, 227, 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-222B. Seminar in Group Behavior. Prerequisite: courses 220, 227, or consent of instructor. Special topics in interpersonal relations and group dynamics. Power control, structure and organization, group functioning. Mr. Kelley, Mr. Raven

C223. Survey Research in Psychology. 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 Psychology C136B. Ms. Gutek

224. Experimental Methods in Social Psychology. Prerequisite: courses 220A, 200B, 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. Prerequisite: courses 220A, 200B, or consent of instructor. May be repeated for credit with consent of instructor. The Social Staff

227. Health Psychology. Lecture, two hours; discussion, one hour. Prerequisite: Undergraduate degree or training in psychology. Health Psychology explores 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. Mr. Taylor

***1M228. Seminar in Political Psychology.** (Same as Political Science M224G.) Prerequisite: course 220A or consent of instructor. Examination of political behavior, political socialization, personality and politics, racial conflict, and the analysis of public opinion on these issues. Mr. Sears

***1229A. Issues in the Social Development of the Minority Child.** Prerequisites: consent of instructor and Graduate Standing. A critical evaluation and integration of existing research on the social psychological development of the minority child. The seminar will focus 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

232. Experimental Research on Human Sexual Behavior. Prerequisite: Graduate Standing. This course has been designed to teach students how to carry out research on human sexual behavior. The contents will 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. The format will be discussion oriented, with emphasis placed on operationalizing predictions concerning human sexual functioning. Mr. Abramson

***1233. Seminar in Environmental Psychology.** Prerequisites: courses 250A, 250B and 235. Critical review of work in environmental psychology designed to identify basic dimensions for the analysis of man-environment relationships. The framework of analysis uses 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 are employed 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

235. Personality. A survey of cognitive, analytic, and learning theory approaches to the study of personality. Emphasis will be on the intensive exploration of selected concepts and related research.
The Personality Staff

238. Seminar in Mental Measurements.
Mr. Woodward

M239. Personality, Motivation and Attribution. (Same as Education M215.) Examines 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 also are stressed. B. Weiner

240. Developmental Psychology. A consideration of the special problems of the control and measurement of the behavior of children as well as the young of other organisms with emphasis on providing basic research relevant to both clinical and research work with children. Ms. Greenfield, Mr. Jeffrey

242A-242E. Seminar in Development Psychology. Prerequisites: course 240 or equivalent and consent of instructor. These seminars may be taken in any order or they may be repeated for credit.

242A. Perceptual Development. Ms. Rader

242B. Cognitive Development.
Ms. Greenfield, Mr. Jeffrey

242C. Socialization. Mr. Madsen

242E. Cognitive Factors in Learning Disorder.
Mr. Adelman

***1243A-*1243B. Seminar in Practical and Societal Issues in Developmental Psychology.** Prerequisites: course 240 or equivalent and consent of instructor. Concerns socialization processes in human development and implication for social-political, educational, research issues, values and societal change. Credit and grade to be given only upon completion of 243B. Mr. Nakamura

244. Critical Problems in Developmental Psychology. Prerequisites: course 240 or equivalent, and consent of instructor. The course will be concerned with current problems and will vary from time to time depending upon the interest of the class and instructor. May be repeated for credit with consent of instructor.

***1M245. Personality Development and Motivation in Education.** (Same as Education M217C.) Personality development and environmental conditions which form motivational patterns; self-concept, moral behavior, aggression; creativity, sex differences, empathy, research and personality theory bearing on motivational problems in school settings and curricula development. Ms. Feshbach

***1M246. Psychological Aspects of Mental Retardation.** (Same as Psychiatry M246.) Prerequisite: consent of instructor. Discussion of the psychological aspects of mental retardation to include: classification, description, etiology, theory, prevention, treatment, assessment, modern and future developments, and input from other disciplines (ethics, law, religion, welfare systems).

***1247A-*1247B. 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 will undertake a substantial project of his own. 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

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

250A. Advanced Psychological Statistics. Review of fundamental concepts. Basic statistical techniques as applied to the design and interpretation of experimental and observational research.
Mr. Woodward, Mr. Wickens

250B. Advanced Psychological Statistics. Advanced experimental design and planning of investigations. Mr. Woodward, Mr. Wickens

251A-251B-251C. Research Methods. Discussion. Students will 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 will be allowed. 251A: S/U grading 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 are drawn 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

257. Multivariate Analysis with Latent Variables. 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: course 250A and 250B or consent of instructor. Special problems in psychological statistics and data analysis will be examined.
Mr. Wickens

***1259. Quantitative Methods in Cognitive Psychology.** Prerequisites: course 250A and 250B or consent of instructor. This course will consider a number of nonstatistical mathematical methods and techniques commonly used in cognitive psychology. Topics to be covered 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 only.

***1261. Perception.** Prerequisite: course 260A or 260B, or 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, Ms. Rader

262. Human Learning and Memory. Prerequisite: course 260A or 260B, or consent of instructor. Contemporary theory and research in human verbal learning and memory; verbal and non-verbal learning and memory processes, the structure and organization of short- and long-term memory. Mr. Bjork

263. Psycholinguistics. Prerequisite: course 260A or 260B, or consent of instructor. Contemporary theory and research in psycholinguistics: coding and decoding, psycholinguistic parameters of language learning, speech recognition and perception.
Ms. French

***1264. Judgment and Decision Processes.** Prerequisite: course 260A or 260B, or 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

***1265. Thinking.** Prerequisite: course 260. Contemporary theory and research in thinking, problem solving, inference, semantic memory, internal representation of knowledge, imagery, concepts.

268A-268E. Seminar in Human Information Processing. Prerequisites: course 260A and 260B or consent of instructor. Topics will vary with the interests of the instructor. May be taken in any order and may be repeated for credit.

268A. Perception. Mr. Thomas

268B. Human Learning and Memory. Mr. Bjork

*1268C. Judgment and Decision Processes.
Mr. Parducci

*1268D. Language and Thought. Mr. MacKay

*1268E. Human Performance.
Mr. Beatty, Mr. Carterette

***1269. Seminar in Cognitive Psychology.** Prerequisites: course 260A and 260B or 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.
The Cognitive Staff

270A-270B-270C. Foundations of Clinical Psychology. Prerequisites: concurrent enrollment in Psychology 271A-271B-271C. Open only 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.
The Clinical Staff

270B. Principles and methods of psychological assessment and evaluation. The Clinical Staff

270C. Principles and methods of psychological intervention in individuals, families and community settings. The Clinical Staff

271A-271B-271C. Clinical Psychological Methods. (½ course each) Prerequisites: concurrent enrollment in Psychology 270A-270B-270C. Procedures in clinical psychology as applied in clinical and community settings. This course provides supervised exposure to the psychological attributes of psychopathology and the procedures for psychological assessment, intervention, and research with clinical populations. Experience will be closely coordinated with the course content in Psychology 270A-270B-270C. The Clinical Staff

272A-272F. Advanced Clinical Psychological Methods. Concurrent or previous enrollment in course 401 or 451, except with consent of instructor. May be taken independently and in any order.

*1272A. Behavior Modification with Children. Prerequisites: course 271A-271B-271C or permission of instructor. This will be one course in the series of clinical intervention and assessment offerings for 2nd and 3rd year clinical students. It will cover behavior modification research and practice in clinic, school, institution and home settings. There will be 3 short, 1 long paper(s) and accompanying clinical demo. (And some field experience.) Mr. Baker

*1272B. Psychotherapy with Adults.

*1272C. Clinical Interventions for Psychological Problems of Children.

272D. Family Therapy and Family Dynamics.
Mrs. McPherson

272E. Special Problems. The Clinical Staff

272F. Advanced Clinical Psychological Methods: Behavior Modification with Adults. Prerequisites: Graduate Standing in clinical psychology; second year or above. The course will focus on current cognitive behavior modification principles and techniques. Major conceptual issues will be analyzed, and specific techniques will be 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. Each student will be supported in developing a design for studying help-oriented interchange in community and clinical settings. Initial focus will be measuring interpersonal deficit, response styles and training effects.
Mr. Goodman

274A-274B. Group Therapy Dynamics.
Mr. Sheehan

M275. Family Process: Psychological and Social Perspectives on the Family. (Same as Social Welfare M275.) This course reviews various theoretical perpectives applicable to the analysis of family structure and dynamics. Critical issues in the application of family constructs to clinical problems will receive particular attention. Mr. Cohen, Mr. Goldstein

276. Clinical Approaches to Children with Learning and Related Behavior Problems. (Formerly numbered 276A-276B.) Lecture, three hours; discussion, one hour. Prerequisite: 225 or 226A or 227A and admission to a doctoral program. The focus is on 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 are offered to illustrate course content and provide opportunities to improve research and clinical competence. Mr. Adelman

277. Advanced Clinical Assessment. The course will cover projective techniques, clinical interpretation, case studies, the psychological test battery, psychopathology, and application of assessment to problems in psychotherapy. Mr. Sheehan

***1278. Seminar in Motivation, Conflict and Neurosis.** Mr. Feshbach

279. Seminar in Research in Psychopathology.
Mr. Rodnick

***1281. 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. Lab work will be 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.
Mr. Rodnick

***1284. Seminar in Clinical Psychology and Communication.** Mr. Sheehan

286. Issues and Concepts of 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. Open to graduate students not majoring in clinical psychology.
Mr. Broen

287. Critical Problems in Clinical Research Methodology. Prerequisites: courses 250A, 250B. Special problems of measurement and design in clinical research will be examined. Mr. Christensen

*†288. Seminar in Research in Personality. (¼ course)** Prerequisite: Graduate Standing in Personality. This course is meant to cover current research, theory and professional issues within the area of personality. A brown bag format will be utilized to foster intellectual exchange and discussion. *All* personality graduate students will be required to attend, they will make at least one presentation per quarter, and will 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 will be considered. 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

293. Behavioral and Psychophysiological Problems of Alcoholism. Prerequisite: consent of instructor. Behavioral and psychophysiological characteristics of alcoholism will be reviewed along with theories concerning its etiology and treatment. Experimental approaches will be emphasized. Mr. Maltzman

298. Special Problems in Psychology. The content will depend upon 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 will be highlighted. Course will include some experience in analysis of actual data sets. Mr. Kaye

Professional Courses

300. Practicum in the Teaching of Psychology. Prerequisites: upper division Psychology major and consent of instructor. Training and supervised practicum for advanced undergraduates in the teaching of Psychology. Students will serve as junior teaching assistants, assist in the preparation of materials and the development of innovative programs. This course may be repeated once for credit, and is offered on a passed/not passed basis.

350. Fieldwork in Psychology. Prerequisites: Sophomore Pre-Psychology or Psychology Major Standing and consent of instructor. Fieldwork in applications of psychology. Students must spend two hours in a weekly seminar and six hours per week working in approved community settings. The Undergraduate Curriculum Development Office, 1531B Franz Hall, should be consulted for application forms and further information. P/NP grading only. May be repeated once for credit. Mr. Friedman

351. Research in Psychology. Prerequisites: Sophomore, Pre-Psychology or Psychology Major Standing and consent of instructor. Practical applications of psychology through research. Students attend a one hour weekly seminar and intern in an approved research setting for seven hours a week. For further information consult the Psychology Advising Office, 1531A Franz Hall. P/NP grading only. May be repeated once for credit. Mr. Friedman and the Staff

401. Field Work in Clinical Psychology. (1 or 2 courses) Prerequisites: courses 271A-271B-271C. Students on practicum assignments are required to register for this course each quarter. Exception with consent of Clinical Program Committee.

***†402. Field Work in Speech Pathology. (1 or 2 courses)** Prerequisite: consent of instructor. Practical work in hospitals and clinics in diagnostic testing and psychotherapy with speech disorders. Mr. Sheehan

410A-410B*†410C. Clinical Teaching and Supervision. Prerequisite: completed Ph.D. comprehensive exams. Advanced to candidacy, or preparations for dissertation research actively underway. Permission of instructor and the Clinic Steering Committee. Study and practice of the knowledge, concepts and theories on teaching and supervision of applied clinical psychology. Mr. Jacobs, Mr. Nakamura

420A-420B. Health Psychology Practicum. (½ course each) Prerequisite: Graduate Standing. The course determines what areas of health, illness, treatment, and delivery of treatment can be elucidated by an understanding of psychological concepts and research, explores the psychological perspective on these problems, considers how the psychological perspective might be enlarged and extended in the medical area, and through a practical field placement helps the student apply the knowledge acquired in class to research observation and/or clinical work in the field. Ms. Taylor

425. Health Psychology Lecture Series. Clinicians and researchers in health psychology from the Los Angeles area will present their research, programs, and/or clinical work as part of a training program in health psychology. May be repeated for credit. S/U graded. Ms. Taylor

451. Internship in Clinical Psychology. (1 or 2 courses) Prerequisite: course 401. Open only to students who have passed departmental qualifying examination. May be repeated for credit.

454. Internship in Industrial Psychology. (½ to 1 course) Mr. Barthol

495. Presentation of Psychological Materials. Supervised practicum in undergraduate teaching. Students will serve as discussion section leaders in selected undergraduate courses.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chairman and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596. Directed Individual Research and Study in Psychology. (½ to 3 courses) One course required during second year of graduate study. One course in 596 or 599 required during each succeeding year of graduate study. (Terminal M.A. candidates are excused from these requirements.)

597. Individual Studies. (½ to 3 courses) Intended primarily for preparation for Ph.D. qualifying examinations. May be required by some area committees as prerequisite for taking qualifying examinations.

599. Research on Dissertation. (½ to 3 courses) Prerequisite: Satisfactory performance in qualifying examinations. One course required during each year following passing of qualifying examinations.

Public Health

(Office, 16-035 School of Public Health)

Abdelmonen A. Afifi, Ph.D., *Professor of Biostatistics and Biomathematics.*

Roslyn B. Alfin-Slater, Ph.D., *Professor of Nutrition and Biological Chemistry.*

Lawrence R. Ash, Ph.D., *Professor of Public Health (Chair of the Department).*

Judith Blake, Ph.D., *Fred H. Bixby Professor of Population Policy and Sociology.*

Lester Breslow, M.D., M.P.H., *Professor of Public Health.*

Potter Chang, Ph.D., *Professor of Biostatistics.*

Virginia A. Clark, Ph.D., *Professor of Biostatistics and Biomathematics.*

Irvin Cushner, M.D., M.P.H., *Professor of Obstetrics and Gynecology and Public Health.*

Roger Detels, M.D., M.S., *Professor of Epidemiology (Dean of the School).*

Olive Jean Dunn, Ph.D., *Professor of Biostatistics and Biomathematics.*

Johathan Fielding, M.D., *Professor of Pediatrics and Public Health.*

Derrick B. Jelliffe, M.D., D.T.M.&H., D.C.H., F.R.C.P., *Professor of Public Health and Pediatrics.*

Snehendu B. Kar, Dr.P.H., *Professor of Public Health.*

Alfred H. Katz, M.A., D.S.W., *Professor of Public Health and Social Welfare.*

Jess Kraus, Ph.D., *Professor of Epidemiology and Southern Occupational Health Center.*

Robert A. Mah, Ph.D., *Professor of Environmental Health Sciences.*

Frank J. Massey, Jr., Ph.D., *Professor of Biostatistics and Biomathematics.*

Alfred K. Neumann, M.A., M.D., M.P.H., F.A.B.P.M., *Professor of Public Health.*

Dennis D. Pointer, Ph.D., *Professor of Public Health and Psychiatry.*

Edward L. Rada, Ph.D., *Professor of Economics in Public Health.*

Milton I. Roemer, M.D., M.P.H., *Professor of Public Health.*

John F. Schacher, Ph.D., *Professor of Public Health in Residence.*

Stuart O. Schweitzer, Ph.D., *Professor of Public Health.*

William Shonick, Ph.D., *Professor of Public Health.*

Marian E. Swendseid, Ph.D., *Professor of Nutrition and Biological Chemistry.*

Paul H. Torrens, M.D., M.P.H., *Professor of Public Health.*

Daniel M. Wilner, Ph.D., *Professor of Public Health.*

Telford H. Work, M.D., M.P.H., D.T.M.&H., *Professor of Infectious and Tropical Diseases and Microbiology and Immunology.*

Ruth Boak, Ph.D., M.D., *Professor of Microbiology and Immunology, Pediatrics and Public Health Emeritus.*

John M. Chapman, M.D., M.P.H., *Professor of Epidemiology Emeritus.*

Gladys A. Emerson, Ph.D., *Professor of Nutrition Emeritus.*

Carl E. Hopkins, Ph.D., M.P.H., *Professor of Public Health Emeritus.*

Raymond J. Jessen, Ph.D., *Professor of Management and Public Health Emeritus.*

Edward B. Johns, Ed.D., *Professor of Health Education Emeritus.*

Florence C. McGucken, M.S., *Lecturer in Nutrition Retired.*

Ralph W. McKee, Ph.D., *Professor of Biological Chemistry and Public Health Emeritus.*

Frank F. Tallman, M.D., *Professor of Psychiatry and Public Health Emeritus.*

Emil Berkanovic, Ph.D., *Associate Professor of Public Health.*

Linda B. Bourque, Ph.D., *Associate Professor of Public Health.*

Albert Chang, M.D., M.P.H., *Associate Professor of Public Health.*

Shan Cretin, M.P.H., Ph.D., *Associate Professor of Public Health.*

Michael Criqui, M.D., Ph.D., *Associate Professor of Public Health and Medicine.*

Climis Davos, Ph.D., *Associate Professor of Environmental Health Sciences.*

Ralph Frerichs, M.P.H., Dr.P.H., *Associate Professor of Epidemiology.*

John Froines, M.S., Ph.D., *Acting Associate Professor of Public Health.*

Michael S. Goldstein, Ph.D., *Associate Professor of Public Health and Sociology.*

Sheldon Greenfield, M.D., *Associate Professor of Medicine and Public Health.*

Isabelle F. Hunt, Dr.P.H., *Associate Professor of Nutrition.*

Mohammad G. Mustafa, Ph.D., *Associate Professor of Environmental Health Sciences and Medicine.*

Charlotte G. Neumann, M.D., M.P.H., *Associate Professor of Public Health and Pediatrics.*

Susan Scrimshaw, Ph.D., *Associate Professor of Public Health and Anthropology.*

Gary H. Spivey, M.D., M.P.H., *Associate Professor of Epidemiology.*
Jane Valentine, Ph.D., *Associate Professor of Environmental Health Sciences.*
Barbara R. Visscher, M.D., Dr.P.H., *Associate Professor of Epidemiology.*
E. Richard Brown, Ph.D., *Assistant Professor of Public Health.*
James M. Cameron, Ph.D., *Assistant Professor of Public Health.*
M. Myra Chern, Ph.D., *Assistant Professor of Biostatistics.*
Joseph S. Coyne, Ph.D., *Assistant Professor of Public Health.*
William G. Cumberland, Ph.D., *Assistant Professor of Biostatistics.*
Curtis D. Eckhert, Ph.D., *Assistant Professor of Nutrition.*
Sander Greenland, Dr.P.H., *Assistant Professor of Epidemiology.*
Huey Mays, Jr., M.D., M.B.A., *Assistant Professor of Public Health in Residence.*
Dianne Moore, M.S.N., Ph.D., *Acting Assistant Professor of Public Health.*
Martin B. Ross, Dr.P.H., *Assistant Professor of Public Health.*
Judith M. Siegal, Ph.D., *Assistant Professor of Public Health.*
Michael Vojtecky, M.P.H., Ph.D., *Assistant Professor of Public Health.*

•

Lilla Aftergood, M.S., Ph.D., *Associate Researcher in Public Health.*
Ellen Alkon, M.D., *Adjunct Professor of Public Health.*
Nancy H. Allen, M.P.H., *Adjunct Lecturer in Public Health.*
Linda Beckman, M.A., Ph.D., *Adjunct Associate Professor of Public Health and Psychiatry.*
Arnold R. Beisser, M.D., *Visiting Lecturer in Public Health and Associate Clinical Professor of Psychiatry.*
Stewart N. Blumenfield, Dr.P.H., *Researcher and Adjunct Lecturer in Public Health.*
Michael L. Bobrow, B.Arch., *Visiting Lecturer in Architecture and Urban Design and Public Health.*
Robert H. Brook, M.D., Sc.D., *Professor of Medicine and Public Health.*
Harold V. Brown, M.P.H., Dr.P.H., *Adjunct Lecturer in Public Health.*
Marianne Brown, M.P.H., *Adjunct Lecturer in Public Health.*
Edith M. Carlisle, Ph.D., *Research Biochemist and Adjunct Professor of Public Health.*
Wen-Ping Chang, M.D., M.P.H., D.M.Sc., *Visiting Lecturer in Public Health.*
Leonard M. Chansky, Ph.D., *Adjunct Assistant Professor of Public Health.*
Arthur Chung, M.D., *Adjunct Professor of Public Health.*
Roger Clemens, Dr.P.H., *Visiting Lecturer in Public Health.*
Davida Coady, M.D., M.P.H., *Adjunct Associate Professor of Public Health.*
Carl F. Coffelt, M.D., M.P.H., *Visiting Lecturer in Public Health.*
Anne H. Coulson, *Adjunct Lecturer and Reseaircher in Public Health.*
Joseph W. Cullen, Ph.D., *Adjunct Professor of Public Health.*
Sigrid Deeds, M.P.H., Dr.P.H., *Adjunct Associate Professor of Public Health.*
G.A. Dhopeshwarkar, Ph.D., *Research Biochemist of Nuclear Medicine and Radiation Biology and Adjunct Professor of Public Health.*
Wilfrid J. Dixon, Ph.D., *Professor of Biomathematics and Public Health.*
Frederick Dorey, Ph.D., *Adjunct Lecturer in Public Health and Assistant Researcher in Biomathematics.*
Robert M. Elashoff, Ph.D., *Professor of Biomathematics and Biostatistics.*
Patricia Engle, Ph.D., *Visiting Lecturer in Public Health.*
James E. Enstrom, Ph.D., *Associate Researcher in Public Health.*
Daniel Ershoff, Dr.P.H., *Adjunct Assistant Professor of Public Health.*
Charles M. Ewell, Jr., Ph.D., *Visiting Lecturer in Public Health.*
Edward J. Faeder, Ph.D., *Adjunct Associate Professor of Environmental Health Sciences.*
Arlene Fink, Ph.D., *Associate Research Social Scientist in Medicine and Adjunct Lecturer in Public Health.*
Paul M. Fleiss, M.D., M.P.H., *Visiting Lecturer in Public Health.*
Jay W. Friedman, D.D.S., M.P.H., *Adjunct Lecturer in Public Health.*
Emile Gauvreau, M.S., *Visiting Lecturer in Public Health.*
Bruce S. Gillis, M.D., M.P.H., *Adjunct Assistant Professor of Public Health.*
Robert D. Girard, L.L.D., *Adjunct Lecturer in Public Health.*
Raymond D. Goodman, M.D., M.P.H., *Assistant Clinical Professor of Medicine and Adjunct Associate Professor of Public Health.*
Stephen Greenberg, M.D., M.P.H., *Adjunct Assistant Professor of Public Health and Pediatrics.*
James Greenwood, M.S., M.P.H., Ph.D., *Adjunct Assistant Professor of Public Health.*
Pensri Guptavanji, M.D., Ph.D., *Adjunct Lecturer in Public Health.*
Donald Guthrie, Ph.D., *Adjunct Professor of Psychiatry and Biobehavioral Sciences and Biostatistics.*
Joseph Hafey, B.A., M.P.A., *Visiting Lecturer.*
Eung-Soo Han, M.D., M.P.H., *Visiting Lecturer in Public Health.*
Brian E. Henderson, M.D., *Adjunct Professor of Epidemiology.*
Arthur C. Hollister, Jr., M.D., M.P.H., *Adjunct Lecturer in Public Health. E.F.*
Richard L. Hough, Ph.D., *Adjunct Associate Professor of Public Health.*
Clifford Howell, M.A., M.P.H., Dr.P.H., *Adjunct Assistant Professor of Public Health.*
Patrice Jelliffe, R.N., M.P.H., *Researcher and Adjunct Lecturer in Public Health.*
Robert I. Jennrich, Ph.D., *Professor of Mathematics, Biomathematics and Biostatistics.*
Olive G. Johnson, B.A., *Visiting Lecturer.*
Michael R. Jones, Ph.D., *Assistant Researcher in Medicine and Adjunct Assistant Professor of Public Health.*
Wilbert Jordan, M.D., M.P.H., *Adjunct Assistant Professor of Public Health.*
Martine Jozan, M.D., Dr.P.H., *Assistant Researcher in Public Health.*
Stephan Kahane, D.Env., *Visiting Lecturer in Environmental Health Sciences.*
Robert L. Kane, M.D., *Professor of Medicine and Public Health in Residence.*
Joel D. Kopple, M.D., *Professor of Medicine and Public Health in Residence.*
Jacqueline B. Kosecoff, Ph.D., *Associate Research Social Scientist in Medicine and Adjunct Lecturer in Public Health.*
Joel W. Kovner, Dr.P.H., *Visiting Lecturer in Public Health.*
John Kurata, *Adjunct Assistant Professor of Medicine and Epidemiology.*
Kenneth E. Lee, M.S., *Lecturer in Public Health.*
Martin Lee, Ph.D., *Visiting Lecturer in Public Health.*
Charles E. Lewis, M.D., Sc.D., *Professor of Medicine and Public Health.*
Harry M. Lieberman, M.D., M.P.H., *Visiting Lecturer in Public Health.*
Ronald L. Linder, Ed.D., *Adjunct Lecturer in Public Health.*
Lawrence S. Linn, Ph.D., *Adjunct Lecturer in Public Health.*
J. Robert Liset, L.L.B., *Visiting Lecturer in Public Health.*
Irvin M. Lourie, M.D., M.P.H., M.S., *Visiting Lecturer in Public Health.*
Thomas Mack, M.D., M.P.H., *Adjunct Associate Professor of Epidemiology.*
Louis E. Mahoney, Jr., M.D., M.P.H., *Adjunct Associate Professor of Public Health.*
Eric J. McLaughlin, M.B.A., *Assistant Professor of Public Health in Residence.*
James F. Mead, Ph.D., *Professor of Biological Chemistry and Public Health.*
Jean L. Mickey, Ph.D., *Lecturer in Biostatistics.*
Norma J. Murphy, M.S., *Assistant Field Program Supervisor and Adjunct Lecturer in Nutrition in Public Health.*
Leonard Mushin, B.S., M.P.H., *Visiting Lecturer in the School of Public Health.*
Joseph P. Newhouse, Ph.D., *Visiting Lecturer in Public Health.*
Edward J. O'Neill, M.D., M.P.H., *Adjunct Assistant Professor of Public Health.*
Mario Panaqua, B.A., *Adjunct Lecturer in Public Health.*
Susan M. Preston-Martin, M.P.H., Ph.D., *Adjunct Assistant Professor of Public Health.*
Stanton J. Price, L.L.B., *Visiting Lecturer in Public Health.*
Walter Price, Dr.P.H., *Assistant Field Program Supervisor in Public Health.*
George W. Prichard, J.D., M.D., M.P.H., *Visiting Lecturer in Public Health.*
Jose Quiroga, M.D., *Adjunct Assistant Professor in Medicine and in Public Health.*
Ruth F. Richards, B.S., M.A., M.P.H., *Field Program Supervisor and Adjunct Lecturer in Public Health.*
Ruth J. Roemer, J.D., *Adjunct Professor and Researcher in Public Health.*
Stanley N. Rokaw, M.D., *Researcher in Public Health and Clinical Professor of Medicine.*
Hossain Ronaghy, M.D., M.P.H., *Visiting Lecturer in Public Health.*
Lawrence S. Rubenstein, Ph.D., *Adjunct Assistant Professor of Public Health.*
Frederick T. Sai, M.B.B.S., D.T.M.&H., M.R.C.P., M.P.H., *Visiting Lecturer in Public Health.*
Rafatollah Salimpour, M.D., *Visiting Lecturer in Public Health.*
Simon A. Sayre, M.D., M.S.P.H., *Assistant Clinical Professor of Obstetrics and Gynecology and Adjunct Lecturer in Public Health.*
James Siemon, Ph.D., M.P.H., *Visiting Lecturer in Public Health.*
Max H. Schoen, D.D.S., Dr.P.H., *Professor of Dentistry and Public Health.*
Helen Shonick, B.A., M.S.W., *Visiting Lecturer in Public Health.*
Bernard M. Siegel, M.D., *Assistant Clinical Professor of Medicine and Adjunct Assistant Professor of Public Health.*
Grant G. Slater, Ph.D., *Research Biological Chemist in Public Health and Psychiatry.*
Howard M. Staniloff, M.D., M.P.H., *Adjunct Assistant Professor of Medicine and Epidemiology.*
Forest Tennant, M.D., M.P.H., Dr.P.H., *Adjunct Associate Professor of Epidemiology.*
Stephen Volla, M.P.H., *Visiting Lecturer in Public Health.*
Jeffrey Wales, M.A., Ph.D., *Adjunct Assistant Professor of Public Health.*
John E. Ware, Ph.D., *Adjunct Lecturer in Public Health and Visiting Researcher in Medicine.*
Fred W. Wasserman, Dr.P.H., *Adjunct Assistant Professor of Public Health.*
Lawrence G. Wayne, Ph.D., *Visiting Lecturer in Public Health.*
Paul F. Wehrle, M.D., *Visiting Lecturer in Epidemiology.*
Marjorie White, B.S., M.S., *Assistant Field Program Supervisor in Public Health.*
Ida Yu, Ph.D., *Assistant Researcher in Public Health.*
Donald Young, B.A., Ph.D., *Visiting Lecturer in Public Health.*
Adrienne P. Zeigler, M.P.H., *Visiting Lecturer in Public Health.*
Jack Zusman, M.D., M.P.H., *Adjunct Professor of Public Health.*

School of Public Health

Public Health is a broad, multidisciplinary field of study directed toward understanding and control of factors affecting the health of populations. The mission of the School of Public Health is to develop and teach the application of the sciences to the solution of community health problems. The concerns of public health cut across national boundaries and include the functions of both voluntary and governmental agencies, of research and teaching institutions, and of health care facilities.

There are many areas of emphasis in the field, and five may be singled out: (1) nature, extent and distribution of disease; (2) quantitative methods of description and analysis; (3) environmental hazards, their identification and control both in technologically advanced and in developing regions of the world; (4) the organization and delivery of high quality health care to all members of society; (5) basic biological and psycho-social processes that affect the health and well-being of populations. Because of the multidisciplinary concerns of Public Health, programs are available for students whose academic preparation has been in one or another of the various physical, biological or social science areas; for example, bacteriology, medicine, nursing, dentistry, veterinary medicine, optometry, pharmacy, engineering, mathematics, statistics, sociology, psychology, economics, political science, etc.

Through organized programs in the School of Public Health, students entering the field may prepare themselves for careers in such basic specialties as epidemiology, biostatistics, nutritional science, environmental health sciences, and maternal and child health in both domestic and international settings. They may also prepare themselves for the challenges in the promotion of community well-being such as in the operation of hospitals, health maintenance in industry, health education of the public, organization of medical care, furthering the role of behavioral sciences in public health, and community health administration.

School of Public Health Divisions

The divisions, rooms and telephone numbers in the School of Public Health are: Behavioral Sciences and Health Education, Room 26-051, (213) 825-5379; Biostatistics, Room 51-254, (213) 825-5312; Environmental and Nutritional Sciences, Room 56-070, (213) 825-9334; Epidemiology, Room 71-254, (213) 825-8579; Health Services, Room 31-269, (213) 825-2594; Population, Family and International Health, Room 36-071, (213) 825-4053.

Application Information for All Degrees within Public Health, Including Biostatistics

Applications. Application forms and the Public Health Announcement can be obtained by writing to the Office of Student Affairs, School of Public Health, UCLA, Los Angeles, California 90024. Both the School of Public Health Application for Admission to Graduate Status and the UCLA Combined Application for Graduate Admission/Fellowship and Financial Aid 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 the applicant's responsibility to ensure that the application file is complete.*

Application Deadline for the School of Public Health for Fall 1983. Although the published deadline for graduate applications is December 30, 1982 for Fall 1983 admission, the School will also review applications received until February 15, 1983. Early application is recommended, however, to expedite review of both applications and funding requests.

Admission Requirements. Applicants must meet the University minimum of an acceptable bachelor's degree with a B average in upper division coursework and/or prior graduate study. Except for the Division of Population, Family and International Health, prior field experience is not required as a condition of admission, although a background of public health experience may be considered as a factor in the evaluation of applicants. In addition, the applicant must be accepted by and accommodated in the Division of the Department of Public Health in which he/she wishes to study. Students who need help to decide upon a Division should speak either to the School of Public Health counselor or to the staff in the Office of Student Affairs.

Applicants to the School of Public Health must perform satisfactorily on a recent GRE, MCAT or DAT aptitude test. Applicants at the master's level require a minimum combined (verbal and quantitative) score of 1100. Applicants at the doctoral level need a minimum combined (verbal and quantitative) score of 1200. The analytical section is not required. No screening examination is required for admission; however, specified courses are required by Biostatistics and Environmental and Nutritional Sciences Divisions (see below). If an applicant's undergraduate coursework has been deficient in breadth of fundamental training and fails to provide a proper foundation for advanced work in the Department, it will be necessary for the student to take specified undergraduate courses after admission.

Information for Applicants at the Master's Level

Applicants must be:

1. Holders of a professional doctoral degree in medicine, dentistry, nursing, optometry, pharmacy, or veterinary medicine (with or without a prior bachelor's degree) from an accredited school.

2. Physicians at UCLA in the General Preventive Medicine Residency.

3. Qualified students in the Latin American or African Studies articulated degree programs or in the schools of Dentistry, Law, Management or Medicine.

4. Holders of a bachelor's degree from an accredited institution. Preparation in the sciences basic to Public Health must be adequate. Such sciences include various combinations of: (a) life sciences; (b) physical sciences and mathematics; (c) social sciences; (d) behavioral sciences. Applicants are not expected to be prepared in all four of these fields, but a background in a suitable combination of these sciences is required.

PLEASE NOTE:

1. Students whose field of concentration is to be in the area of Environmental Health Science or Nutritional Science should have a bachelor's degree in biological or chemical sciences or an appropriate field with coursework including: three quarters of general chemistry including quantitative analysis and three quarters of organic and/or biochemistry; mathematics through calculus; three quarters of biological sciences (for nutrition only; this must include one quarter of bacteriology or microbiology); three quarters of physics.

2. Applicants interested in the Health Services Management Program in the Division of Health Services must be interviewed by a member of the faculty of the program. Preliminary selection of applicants is made by *program* faculty who then advise the Division of the final selection. Prior to enrollment, students must demonstrate a basic competency in accounting either by taking an introductory accounting course or by passing a waiver examination administered by the program.

3. Applicants interested in the Population, Family and International Health Program must have some prior experiences in the health field (paid or volunteer).

4. For admission to the Master of Science in Biostatistics Program, the student must have completed the bachelor's degree with a major in mathematics or computer science or a field of application of biostatistics. Undergraduate preparation for the program should include Mathematics 31A-B, 32A-B, 33A-B (second year calculus) or the equivalent.

Information for Applicants at the Doctoral Level

Admission Requirements for the Dr.P.H. and the Ph.D. in Public Health. In addition to the University minimum requirements, the Department requires (1) at least a 3.0 junior-senior undergraduate grade point average, at least a 3.5 grade point average in graduate studies or demonstrated superiority in graduate work, and at least a B in each of the mandatory CORE courses of the School; (2) a positive recommendation by a Division of the School (Department of Public Health); (3) approval by the Doctoral Admissions Subcommittee; (4) approval by the Departmental Chair;

and (5) for the Dr.P.H., completion of the M.P.H. degree in Public Health or an appropriately related field. (If the master's degree is in a field other than Public Health, the applicant must have taken the equivalent of the mandatory M.P.H. courses or include them in his/her course of study after admission.) (6) for the Ph.D., in Public Health, completion of the M.S. in Public Health or an appropriately related field (students with an M.P.H. will need to satisfy the requirements of the School's M.S. in Public Health before admission to candidacy).

Admission Requirements for the Ph.D. in Biostatistics. Qualifications for admission to the Ph.D. program in Biostatistics are those currently specified by the Graduate Division. Normally, students receive an M.S. in Biostatistics at UCLA before admission to the Ph.D. program. Students who enter the Ph.D. program from other master's programs are required to pass a written Comprehensive Examination within one year of their admission. This examination is comparable to the M.S. Comprehensive Examination.

Major Fields or Subdisciplines

Master's Level

Master of Public Health

The School of Public Health offers the Master of Public Health degree in the following areas of concentration:

Health Education

Biostatistics

Environmental Health Science — (with emphasis in water quality; environmental management; air quality; environmental epidemiology; environmental sciences and engineering; occupational health and safety (industrial hygiene); or environmental toxicology)

Epidemiology — (with emphasis in chronic diseases or infectious and tropical diseases)

Health Services Organization — (available, in general, only to students with a prior doctoral degree. Exceptions may be granted by the Division Head with the approval of the Assistant Dean of Academic Affairs.)

Health Services Management — (with emphasis in health facility management; finance and accounting; or health information systems)

Nutritional Science — (with emphasis in pubic health community nutrition and nutritional biochemistry)

Population, Family and International Health — (with emphasis in population; family health and family planning; reproductive and women's health; family health, including maternal and child health, genetic counseling; international health, including nutrition.

Master of Science in Public Health

The areas of specialization offering the M.S.P.H. degree program are:

Behavioral Sciences

Environmental Health Science — (with emphasis in water quality; management; air quality; environmental epidemiology; environmental sciences and engineering; occupational health and safety (industrial hygiene); or environmental toxicology

Epidemiology — (with emphasis in chronic diseases or infectious and tropical diseases)

Health Services — (with emphasis in health planning, health policy analysis, health services research, for clinicians, or health information systems.)

Nutritional Science

Master of Science in Biostatistics

Two major fields are specified; biostatistics and statistical health data management.

Doctoral Level

Doctor of Public Health

The School of Public Health offers the Doctor of Public Health degree in these areas of concentration:

Behavioral Science and Health Education

Biostatistics

Environmental Health Science

Epidemiology

Health Services

Nutritional Sciences

Population, Family and International Health

Ph.D. in Public Health

The School of Public Health offers the Doctor of Philosophy in Public Health degree in these areas of concentration:

Behavioral Sciences and Health Education

Environmental Health Science

Epidemiology

Health Services

Nutritional Science

Ph.D. in Biostatistics

The School of Public Health offers a Ph.D. in Biostatistics.

Advising

Masters' Candidates

An adviser is appointed for each beginning master's student by the (Division) Head of the respective Division.

The student and the adviser together agree upon a study list for each academic quarter and any subsequent alterations must be approved by both the adviser and the Assistant Dean of Academic Affairs before submission to the Graduate Division. The student is expected to meet with his/her adviser each quarter.

A departmental Guidance Committee is established when the student has completed approximately half of the program for the master's degree. Members of the departmental Guidance Committee are nominated by the Division Head after consultation with the adviser and the student and are approved by the Department Chair.

An adviser is responsible for the academic progress of his/her advisees. Progress is evaluated on an ongoing basis. At the end of each quarter, the Assistant Dean of Academic Affairs reviews academic listings of students and notifies them and the advisers when the cumulative grade point average is below a 3.0. Advisers review each case with their advisees and make recommendations to the Assistant Dean of Academic Affairs for continuance or dismissal. If a student wishes to change advisers, he/she must file a petition which must be approved by the "new" adviser, the Division Head, and the Assistant Dean for Academic Affairs.

Doctoral Candidates

Doctor of Public Health. An academic adviser is assigned to each new student by the Head of the Division. The student and the adviser together agree upon a study list for each academic quarter; any subsequent alterations must be approved both by the student's adviser and the Assistant Dean of Academic Affairs before it is submitted to the Graduate Division. Advisers may be changed after the first quarter by mutual consent of both the student and new adviser via blue petition countersigned by the Division Head and the Assistant Dean of Academic Affairs.

Within the first three quarters of study, the student files Doctoral Form 1, "Petition for Establishment of Three Member Guidance Committee and Study in Major and Minor Fields for the Dr.P.H." The Guidance Committee comprises three members including the student's adviser in the major field and the adviser in the minor field. On this form, the student lists courses to be taken for the minor which must be approved by the student's adviser, the Division Head, and the Department Chair.

Ph.D. in Public Health. An academic adviser is assigned to each new student by the Head of the Division. The student and the adviser together agree upon a study list for each academic quarter; any subsequent alterations must be approved both by the adviser and the Assistant Dean of Academic Affairs before it is submitted to the Graduate Division.

Within the first three quarters of study, the student files Doctoral Form 1, "Petition for Establishment of Three Member Guidance Committee and Study in Major and Cognate Field for the Ph.D." The Guidance Committee consists of three members including the student's adviser in the major field and the adviser in the minor field. Courses to be taken for the cognate field are listed on this form, which must be approved by the student's adviser, the Head of the Division, and the Chair of the Department.

Ph.D. in Biostatistics. A faculty adviser is appointed for each beginning doctoral student by the Division Head. The adviser meets with the student each quarter to discuss the student's academic progress. When the student advances to candidacy, the Chair of the dissertation committee becomes the adviser.

Degree Requirements

General Master's Level Degree Information

The M.P.H. is a professional degree in the field of public health. The student is expected to focus on public health practice and to acquire a broad knowledge related to professional skills.

Screening Examinations. No screening examinations are required except in the Behavioral Sciences and Health Education Division. In this area, a student who does not have an M.P.H. or an M.S.P.H. must pass a screening examination held no earlier than after three quarters in residence and after satisfying course requirements. The purpose of the examination is to evaluate evidence of a student's potential for successful work at the doctoral level. Only one reexamination after failure is allowed.

Time to Degree. From graduate admission to award of the degree (depending upon the area of specialization), normal progress is from three to seven quarters. Upper limit for completion of all requirements is seven quarters of enrollment, including quarters enrolled in previous graduate study at a University of California campus prior to admission to the School of Public Health. Maximum time allowable from enrollment to graduation, including leaves of absence is five years.

Disqualification. Students must maintain a 3.0 grade point average or they will be subject to dismissal. If a student's grade point average falls below this, it must be raised to 3.0 by the end of the following quarter. Also, a student will be terminated if he/she fails to complete the required coursework in seven quarters of enrollment.

Appeals. Appeals can be made by the student utilizing the standard blue petition form. The petition must be approved by the adviser, the Division Head, the Assistant Dean of Academic Affairs, the Chair of the Department, and the Dean of the Graduate Division.

500 Series Course Limitations

Course Number	Unit Value	Type of Grading	Number of Times May Be Repeated	Apply Toward Minimum
596	2-8	Letter	No Limit	4 units
597	2-8	S/U	No Limit	None
598	2-8	S/U	No Limit	4 units (no credit allowed toward the minimum 5-graduate course requirement)

Master of Public Health Degree

Course Requirements

Award of the M.P.H. degree requires a minimum number of acceptable courses as specified by each program. The minimum number of courses required is 11 in an approved program, but frequently a student is required to take more than this minimum depending upon his/her background and field of study. This minimum may be reduced to 10 for students with suitable previous graduate studies in health fields (such as physicians) if appropriate for the field of study. At least five courses toward the M.P.H. must be graduate level (200, 400, and 500 series).

Unless previously taken, mandatory School CORE courses for the M.P.H. degree are currently 3½ courses, 14 units of credit and *must* be taken during the first year of study.

1. Introduction to Biostatistics (Public Health 100A or 101A or 103, depending upon area of specialization and/or degree program). (NOTE: Public Health 103 is designed as a terminal course for those who do not intend to take any other biostatistics courses.)

2. Principles of Epidemiology (Public Health 112). Epidemiology majors substitute Epidemiology I (PH 114). (Prerequisite: PH 110, Introduction to Medical Science or PH 111, Human Disease and Public Health or equivalent.)

3. Health Services Organization (Public Health 130).

4. Introduction to Environmental Health (Public Health 155) or PH 150 for students with suitable scientific background or students specializing in environmental health.

The individual CORE course (not units) can be waived if the student has taken a similar course elsewhere and can pass the waiver examination for that course.

The remaining courses (at least 7½ courses, 30 units of credit) are determined by the student's choice of an area of specialization as described below, and include the requirements of one course in the 400 series. Field training in an approved public health program of up to 10 weeks is required of candidates who have not had prior relevant field experience.

Thesis or Comprehensive Examination Plan

Comprehensive Examination Plan. Both a schoolwide comprehensive examination over material encompassed by the CORE courses and an examination in the student's major field (Division) are required. A student who fails either section may be reexamined no more than once. The schoolwide CORE course Comprehensive Examination is administered twice each academic year, usually the first Saturdays in May and November. The examination in the major field is administered by the student's Division. Students in the Environmental Health area undertake cumulative examinations on current Environmental Health topics in addition to the above examinations. An examination will be offered once every quarter. Out of a total of six attempts, the student must pass three cumulative examinations.

Thesis Plan. The thesis option is only available in the Division of Behavioral Sciences and Health Education. In this Division, students wishing to prepare a thesis rather than take an examination in the major field may do so if they have successfully completed PH 181 and PH 281, and if permission has been obtained by petition. Upon approval, a thesis committee is established after a student has been in residence three quarters. The thesis committee, comprising a minimum of three faculty members (two of whom must be from within the student's department), is recommended by the Department Chair after consultation with the student and the student's adviser and is appointed by the Dean of the Graduate Division. The committee approves plans for the thesis prior to the student's petition for advancement to candidacy. The completed thesis must be acceptable to the committee and a copy must be submitted to the Graduate Division.

Areas of Specialization

Areas of specialization offered in the M.P.H. degree program and typical course plans, in addition to mandatory courses, are listed below.

Behavioral Sciences and Health Education

Usually Required Courses. Public Health 182 and 183 (two quarter sequence), 482 (8 units of Field Work Practicum) and five courses (20 units) in consultation with the faculty adviser of which at least three (12 units) must be chosen from among: PH 280, 181 and 281 (two quarter sequence), 282, 287, 288, 480, 481, 483 and 484. Individual and experimental courses will not count among the required course units. Additional courses in consultation with the faculty adviser may be elected from among those offered by divisions within the Department or by other Schools/Colleges at UCLA.

Biostatistics

Usually Required Courses: PH 100A-D, or 101A-B, 100C, 100D; 200; 401E or 401F; 3 from the following: 403, 404, 405, 406; 402A, 402B. PH 402B will satisfy the requirements for field training.

Recommended Courses. Public Health 211A, 211B, Management 113A, 113B.

Electives. Courses in Public Health, Biomathematics, or Mathematics.

Environmental Health Sciences

Usually Required Courses. Public Health 150, 152, 153, 154, 250, 253A, 255, 256, 400, 450, and one course in Occupational Health. *Please note:* Public Health 255 and 256 may be repeated for credit.

Recommended Courses. Public Health 251 or 252, 253B, 254, 261A, 454.

Electives. Courses in Public Health, Engineering and Applied Science, Chemistry, Biology, Management, Architecture and Urban Planning, and Medicine.

Units from the courses listed above sum to approximately 52. At least five of these courses must be graduate courses (200, 400, and 500 series). Thus, approximately 20 units are to be completed by specialty courses and electives for a 2-year program assuming a minimum of 12 units per quarter. It should be noted that the divisional core also satisfies the requirement for taking the registered sanitarian's examination.

After or simultaneous with fulfillment of the core divisional and schoolwide requirements, students take courses with emphasis in the following: water quality; management; air quality; environmental epidemiology; environmental sciences and engineering; occupational health and safety (industrial hygiene); or environmental toxicology.

Students specializing in the environmental epidemiology track should substitute PH 114 and 211A (prerequisites for advanced epidemiology courses) for PH 112 (see M.P.H. course requirements). PH 110 or PH 111 must be taken concurrently with PH 114 unless a student passes the waiver examination.

In addition to the School- and program-required Comprehensive Examinations, Master of Public Health students in Environmental Health are required to take cumulative examinations on current Environmental Health topics. An examination will be offered once every quarter. Out of a total of six attempts, the student must pass three cumulative examinations.

Epidemiology

Chronic Diseases. *Usually Required Courses.* Public Health 100B, 210, 211A, 211B, 400 (for predoctoral students), 596 (for postdoctoral students), one half or one course in Behavioral Sciences and two additional courses from the following: PH 212E, 212G, 212I, 213, 215A-B, 217, 221, 223, 225, 410A-B. (Physicians and other postdoctoral students in an appropriate biomedical science may petition for waiver of Public Health 400.)

Report. Candidates must submit a report demonstrating competence in epidemiologic methodology. The report may not be sumitted prior to the completion of PH 400, Field Studies in Epidemiology, for predoctoral students or PH 596, Directed Individual Study, for postdoctoral students who qualify for waiver of PH 400. PH 400 must be taken after completion of PH 211B. PH 596, for postdoctoral students, may be taken concurrently with PH 211B; minimum enrollment in 2 units of PH 596 is required for report grade.

Infectious and Tropical Diseases. *Usually Required Courses.* Public Health 100B, 210, 211A, 400 (for predoctoral students), 596 (for postdoctoral students) 212H, 216A-B; 218A-B; 220A-B; 222 (must be taken each quarter). Doctoral students holding a doctorate in an appropriate biomedical science may petition for waiver of Public Health 400.

Report. Candidates must submit a report on a project related to Infectious and Tropical Diseases. The report may not be submitted prior to the completion of PH 400, Field Studies in Epidemiology, for predoctoral students or PH 596, Directed Individual Study, for postdoctoral students who qualify for waiver of PH 400. PH 400 must be taken after completion of PH 211B. PH 596, for postdoctoral students, may be taken concurrently with PH 211B; minimum enrollment in 2 units of PH 596 is required for report grade.

Health Services

Health Services Management. *Usually Required Courses.* Public Health 131, 133, 139, 400, 430, 431, 432, 433, 434, 436, 443D, 596.

Recommended Courses. Public Health 134, 231, 443E.

Electives. Elective courses are selected by the student in consultation with the faculty adviser.

Residency. Following the first three quarters of study, students are placed in health service management residencies throughout the Los Angeles area for a period of 9½ months.

Health Services Organization. An MPH is available as a 1-year program for students with prior doctoral level degrees. Recommended courses are determined on an individual basis by the student and the adviser. No summer internship is required.

Health Information Systems. Organization of data for planning design, and implementation of health systems. *Usually required courses.* Requirements are individually determined but generally include work with computer systems. A summer internship is required.

Nutritional Sciences

Usually Required Courses. Public Health 163 (if waiver examination is passed, course requirement may be fulfilled through elective courses approved by the adviser), 165 or 261A, 260E-F; 261A or 165, 262 or 263 (may be repeated for credit), 400, 460, 461, 463.

Recommended Courses. Public Health 162, 264E, 264F, 462.

Electives. Public Health 100B-C; 166A-B; 173, 181, 270, Biology M134, 177, Education 113.

Of the courses listed above, at least five graduate level courses (200, 400, 500) and at least one seminar course (262, 263) are required.

A minimum of 56 units is required by the Division for the M.P.H. degree. It is expected that after the first quarter, students will take a seminar each quarter, except for the quarter wherein PH 400 and PH 463 are taken.

Population, Family and International Health

Usually Required Courses. Students are required to complete at least four courses (16 units) offered by the Division, plus Public Health 125, 400, 596.

Electives. Elective courses are selected by the student in consultation with the 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 44 units.

Programs in Conjunction with Other Schools and Departments at UCLA which Lead to the M.P.H.

Following are descriptions of combined programs of study leading to the M.P.H. degree:

Articulated Degree Program: Public Health (M.P.H.) and African Area Studies (M.A.).

The School of Public Health and the Interdepartmental Degree Program in African Area Studies have arranged a program to permit a student to work sequentially for the master's degree in African Area Studies (M.A.) and a master's degree in Public Health (M.P.H.). By planning a major field emphasis in Public Health while working toward the M.A. degree 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 working for these two degrees should be aware that this is not a concurrent degree program. The articulated degree program operates in a sequential manner. The normal pattern of graduate study for a student working in this articulated degree program will begin with admission to the M.A. program in African Area Studies. While enrolled in this program, a student will consult with faculty members in the School of Public Health and, on their advice, take a specified series of courses in the field of Public Health. This coursework will enable students to establish a solid basis upon which they may build their academic credibility for subsequent application to the M.P.H. degree.

Admission to the M.A. in African Area Studies does not automatically confer admission into the M.P.H. program since each of these degree programs retains complete jurisdiction over its own admissions. Admission to the M.P.H. program will normally occur in the following manner. While continuing in the M.A. in African Area Studies, the student will file a petition for a change of major to Public Health. This will ordinarily occur during the quarter in which the student anticipates completion of the M.A. degree. If this petition is approved by the School of Public Health, the student will enter the M.P.H. program the following quarter.

Students should be aware that 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. may not also be counted toward the M.P.H.

Students interested in this articulated program should write to Ms. Joy Williams, Assistant Graduate Adviser, M.A. Program in African Area Studies, African Studies Center, UCLA, Los Angeles, CA 90024, or to the Office of Student Affairs, School of Public Health, UCLA, Los Angeles, CA 90024.

Articulated Degree Program: Public Health (M.P.H.) and Latin American Studies (M.A.).

The School of Public Health and the Latin American Studies Interdepartmental Degree 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, family and international health. Students may apply to both programs simultaneously, be admitted first to one program and then apply to the other, or pursue the requirements for each degree separately. Admission to the M.P.H. program is contingent upon acceptance by the School of Public Health.

Upon admission to either the Latin American Studies Program, the Public Health Program, or both, students must consult the Graduate Advisers in both programs. Typically, students take courses in both programs from the beginning. A given course may not be used for credit toward more than one degree, but the content of courses can help students meet breadth or specialty requirements, thus reducing the time needed to complete both degrees. A comprehensive research project in a topic relevant to both areas is required to meet the requirements for both degrees.

Potential applicants should contact the Graduate Adviser, Latin American Studies, Latin American Center, UCLA, and/or the Public Health/Latin American Studies Articulated Degree Program Adviser in the School of Public Health.

Concurrent Degree Program: Management (M.B.A.) and Public Health (M.P.H.)

The School of Public Health, Division of Health Services, in cooperation with the Graduate School of Management, offers a course of study concentration leading to the award of the M.P.H. and M.B.A. degrees concurrently. Students interested in this joint program must apply and be admitted to both the Division of Health Services in the School of Public Health and the Graduate School of Management. All inquiries about application to the M.P.H./M.B.A. program should be addressed to the UCLA Graduate School of Management, M.B.A. Admissions, Los Angeles, CA 90024.

Preventive Medicine Residency Program

A residency in General Preventive Medicine is available to physicians. The first year of the residency is comprised of formal studies for the Master of Public Health in either Epidemiology or Health Services, and application must be made simultaneously for both the residency and admission to the School of Public Health for the M.P.H. Admission to the residency should be made to: Director, Preventive Medicine Residency Program, School of Public Health, UCLA, Los Angeles, CA 90024.

Physician applicants are generally admitted to the second and third year of the residency only after completion of M.P.H. studies at an accredited school of public health. The second and third year are individually organized for each resident's particular interests, under the specific direction of a faculty member assigned to the resident for the purpose of supervising the resident's work or practical and applied field experiences at UCLA or in the surrounding community. The resources of the Los Angeles County Department of Health Services are generally available to the residents and provide ample opportunity for either short- or long-term assignments.

The Preventive Medicine Residency at UCLA is organized to provide an opportunity for each prospective resident to develop an individualized course of training to suit his/her particular interests or needs, whether those interests lie in research, teaching, or practice — or a combination of all three.

Master of Science in Public Health

The Master of Science program provides research orientation within the general field of public health. It is intended to prepare students in depth in a specialty area in public health and includes the preparation of a thesis or major written report.

Course Requirements

Award of the M.S. degree requires a minimum number of acceptable courses as specified by each program. The minimum number of courses required is nine (9), at least five of which must be graduate level courses in the 200 or 500 series.

Unless previously taken, mandatory courses for the M.S. degree are three courses, 12 units of credit.

1. Introduction to Biostatistics (Public Health 100A).

2. Introduction to Biostatistics (Public Health 100B).

3. Principles of Epidemiology (Public Health 112). Epidemiology majors substitute Epidemiology I (Public Health 114). (Prerequisite: PH 110, Introduction to Medical Science or PH 111, Human Disease and Public Health or equivalent.)

Any individual CORE course (not units) can be waived if the student has taken a similar course elsewhere and can pass the waiver examination.

The remaining courses (at least six courses, 24 units of credit) are determined by the student's choice of an area of specialization (described below), and include the requirement of two research methodology courses.

Thesis or Comprehensive Examination Plan

Either the Thesis Plan or the Comprehensive Examination Plan may be selected by students in the Division of Behavioral Sciences and Health Education and the Division of Health Services. For students in the Divisions of Environmental and Nutritional Sciences and Epidemiology, a thesis is usually required. Under exceptional circumstances, students may petition to substitute a comprehensive examination and written report.

Thesis Plan. A thesis committee is established after a student has been in residence for three quarters. The thesis committee, composed of a minimum of three faculty members, is recommended by the Department Chair after consultation with the student and the student's adviser and is appointed by the Dean of the Graduate Division. The committee approves plans for the thesis prior to the student's filing for advancement to candidacy. At least two of the faculty members must be from within the Department. No member outside the Department is required.

The thesis must be acceptable to the thesis committee and a copy must be submitted to the Graduate Division.

Comprehensive Examination Plan. If the Comprehensive Examination option is approved for the student, a comprehensive examination committee composed of a minimum of three faculty members, is appointed by the Chair of the Department on the recommendation of the Division Head. There must be a written Comprehensive Examination on the student's major area of study. A student who fails may be reexamined no more than once. The preparation of a major written research report is required. This must be approved by a 2-member committee which may overlap the comprehensive examination committee.

Areas of Specialization

Areas of specialization offered in the M.S. degree program, and typical course plans, in addition to mandatory courses, are listed below.

Behavioral Sciences and Health Education

Usually Required Courses. Public Health 181, 182, 183, 280, 281.

Electives. 16 units (four courses) of electives, chosen in consultation with an adviser, at least one of which must be chosen from the 283 series and at least two of which must be chosen from among the following: Public Health M283E, M283F, M283G, PH 282, PH 284, 285, 483.

Environmental Health Science

Usually Required Courses. Public Health 150, 153, 154, 250, 253A, 255 and 256 (may be repeated for credit), 261A, 450, 598 (a maximum of one course will count toward minimum total course requirement), Biological Chemistry 101A or equivalent, 101B or equivalent.

Electives. Microbiology 105, 106, 110, M263, Biology 122, 214, Chemistry 103, Public Health 152, 251, 252, Engineering and Applied Science 180A, 181A, 184D, 280A, 280B, Law 290, Pharmacology 201, other appropriate upper division and graduate courses in Public Health, Biological Chemistry and Physical Sciences, and Engineering.

Units from the courses listed above sum to approximately 13 courses (52 quarter units). At least five of these courses must be graduate level (200 and 500) and at least one course of seminars (255 and 256) must be taken. In addition, students must complete a laboratory project plus thesis.

After or simultaneous with fulfillment of the core divisional and schoolwide requirements, students may take courses in one of the following areas after counseling and with continued guidance of the faculty adviser: water quality; management; air quality; environmental epidemiology; environmental sciences and engineering; occupational health and safety (industrial hygiene); or environmental toxicology. Students specializing in the epidemiology tract should substitute PH 114 and 211A (prerequisites for advanced epidemiology courses) for PH 112 (see M.S. Course Requirements). PH 110 or 111 will need to be taken concurrently with PH 114 unless a student passes the waiver examination.

In addition to the completion of the master's thesis, M.S. students in environmental health are required to take cumulative examinations on current environmental health topics. An examination will be offered once every quarter. Out of a total of six attempts, the student must pass three cumulative examinations.

Epidemiology

Chronic Diseases. *Usually Required Courses.* Public Health 210, 211A-B; 221 plus 16 units as follows: one full course in demography, one full course in Biostatistics, one full course in data management, and one full course in Topic Specific Epidemiology (PH 212E, 212G, 212I, 213, 215A-B; or 225).

Recommended Courses. Public Health 130 for students planning to enter the Dr.P.H. program or with the intention of practicing epidemiology in a health department; Public Health 410A, 410B.

Electives. Relevant courses in public health and biomedical sciences.

Infectious and Tropical Diseases. *Usually Required Courses.* Public Health 210, 211A-B; 212H, 216A-B; 219; 220A-B; and 222 (must be taken each quarter).

Recommended Courses. Public Health 130 for students planning to enter the Dr.P.H program or with the intention of practicing epidemiology in a health department.

Electives. Public Health 214, 219, and relevant courses in public health and biomedical sciences.

Health Services

Usually Required Courses. **Planning emphasis:** Public Health 134, 136B, 138, 243, 248, 403, 444B, 445A-B, (summer internship) 596, plus one political science course and three management courses. **Policy emphasis:** Public Health 134, 138, 233, 238, 445A-B, (summer internship), 596, plus one evaluation course, and two management courses. **Research emphasis:** Public Health 136A, 136B, 136C, 231, 232, 233, 234A-B, 235, 238.

Recommended Courses. **Planning emphasis:** Public Health 136A, 139, 231, 232, 235, 239, 240, 430, 437, 438, 440A, 447D, 447E. **Policy emphasis:** Public Health 231, 232, 235, 239, 240, 247, 403, 437, 438, 440A, 447D, 447E. **Research emphasis:** Public Health 131, 134, 138, 236, 240, 446, 447D, 447E.

Electives. Worked out with adviser — chosen from recommended courses and others.

Field Work. A summer field placement of a minimum of 10 weeks is required following the first three quarters of study.

The equivalent of 18 full courses is required for completion of the M.S. degree.

Nutritional Science

Usually Required Courses. Biological Chemistry 101A or 201A, 101B or 201B, Public Health 260E-H; 261A-B; 262 and 596 (may be repeated for credit).

Recommended Courses. Public Health 162, 165, 264E-F.

Electives. Physiology 100, Public Health 100C, 181, Biology M134, 177, Biological Chemistry M261.

Of the courses listed above, five must be at the graduate level (200 and 500), and at least one course of seminars (262) is required.

Students must complete a thesis. A minimum of 52 units is required by the Division for the M.S.P.H. degree. It is expected that after the first quarter students will take a seminar each quarter.

Master of Science in Biostatistics

Course Requirements

The M.S. degree in Biostatistics requires a minimum of nine graduate and upper division courses, of which at least five are graduate courses (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 offered in the M.S. in Biostatistics degree program 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, 100C, 200A, 200B, 200C; any two courses from M201E, 201F, 201G, 201H, 201J, 201K, 201M; 204E; 402A, 402B; Mathematics 150A, 150B, 150C or Mathematics 152A, 152B.

Other courses in biostatistics or mathematical statistics, or in related areas such as biology, physiology, public health, management, or mathematics are selected with the adviser's consent.

Master's Report: A written report under the direction of a member of the Biostatistics faculty is required.

Comprehensive Examination: A written comprehensive examination covering the above course material 2is required.

Statistical Health Data Management

Unless previously taken, the following courses must be included in the degree program: Engineering 10C, Public Health 101A, 101B, 100C; 200A, 200B, 200C; 403; 203A, 203B; 404 or 405; Mathematics 150A, 150B, 150C or Mathematics 152A, 152B. One public health course in a division other than Biostatistics is to be selected with the 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 the adviser's consent.

Master's Report: A written report under the direction of a member of the Biostatistics faculty is required.

Comprehensive Examination: A written comprehensive examination covering the above course material is required.

Thesis or Comprehensive Examination Plan

Thesis Plan. The thesis plan is not used.

Comprehensive Examination Plan. The comprehensive examination committee is appointed by the Head of the Biostatistics Division. The written Comprehensive Examination is on the major field only. It is taken during the Spring Quarter of the academic year of the student's Public Health 200A-C sequence. A student who fails the examination is allowed to repeat it only once; the time of reexamination is specified by the Division. A student who does not take the reexamination at the specified time forfeits the right to reexamination.

General Doctoral Level Degree Information

Foreign Language Requirement

Ph.D. in Biostatistics and Dr.P.H.

A foreign language is not a requirement for either the Ph.D. in Biostatistics or the Dr.P.H. degree, but conversational Spanish is recommended for Nutritional Science students.

Ph.D. in Public Health

One foreign language relevant to the student's major field and approved by the Guidance Committee is required, using a method acceptable to the Graduate Division (usually Educational Testing Service [ETS] examination given on campus, with a minimum score of 500). This requirement must be met before the qualifying examination. If a student's native language is not English, English may be used to fulfill the foreign language requirement.

Teaching Experience

Teaching experience is recommended but not required for doctoral degrees.

Screening Examinations

No screening examinations are required except in Behavioral Sciences and Health Education. In that field, if a student does not have a prior M.S.P.H., he/she must pass a screening examination held no earlier than after three quarters in residence and after satisfying course requirements. Only one reexamination after failure is allowed.

Time to Degree

Dr. P.H. and Ph.D. in Public Health

Normally, students will not be admitted to the doctoral program until after they have completed a master's degree. If the student has not completed all requirements for the master's degree by the time of admission to the doctoral program, the master's degree must be completed prior to taking the Written Qualifying Examination, no later than the sixth quarter in residence. If the student has completed a master's degree program, the written and oral examinations should be completed by the sixth quarter in residence.

Maximum time allowable from enrollment in the graduate program in the School of Public Health and completion of the degree, including leaves of absence, is 20 quarters or 8 years. This limitation includes quarters enrolled in previous graduate study at a University of California campus prior to admission to a doctoral degree program.

Ph.D. in Biostatistics

From admission to the doctoral program to the Written and Oral Qualifying Examinations and advancement to candidacy usually takes nine quarters or less. From advancement to candidacy to the Final Oral Examination usually requires three quarters. Usually 12 quarters are required from graduate admission to award of the degree.

Maximum allowable time for the attainment of the degree is 20 quarters of enrollment or eight years. This limitation includes quarters enrolled in previous graduate study at a University of California campus prior to admission to the doctoral degree program and leaves of absence. However, the approved normative time-to-degree is 15 quarters (five years) and this time limit must be observed in regard to the In-Candidacy Fee Offset Grant Program.

Disqualification

The following are conditions which lead to termination:

(a) Failure to maintain a 3.0 grade point average in two consecutive quarters since admission to the doctoral program.

(b) Failure of any written Qualifying Examination in the major or minor fields more than once or failure of either oral examination more than once.

(c) Exceeding enrollment time limits.

Appeals

The student may appeal the decision to the Head of his or her Division who will forward the appeal to the Dean of Students or the Chair of the Department.

Doctor of Public Health

Degree Information

The Doctor of Public Health is the highest professional degree for the public health generalist. The student is expected to focus on public health practice and to acquire broad knowledge related to professional skills. The minor field can be used to provide some of this breadth. The dissertation is of an applied, practical, problem-solving nature and must demonstrate the candidate's ability for independent investigation.

Course Requirements

The course requirements covered by the Written Examinations depend upon the Division and the field which the student enters, and the study list is chosen in consultation with the Guidance Committee and the adviser in the minor field.

The minor field may be in one of the Divisions of the Department of Public Health or in another department. A minimum of four graduate courses (16 units) in the minor field is required.

A listing of required courses is given below under Areas of Specialization.

Written and Oral Qualifying Examinations

Before advancement to candidacy, the student must pass written examinations in the major and minor fields and the Oral Qualifying Examination. The Written Qualifying Examination in the major field is prepared and administered by the Guidance Committee or by the faculty of the Division. The conduct of the Written Qualifying Examination in the minor field is the responsibility of the representative from the minor field or the Guidance Committee. One reexamination after failure is allowable; more than one would be granted only in unusual circumstances.

When a student is ready to take the Oral Qualifying Examination following successful completion of the written examination, a doctoral committee is nominated by the Chair of the Department after consultation with the student, the adviser, and the Division Head, and is appointed by the Dean of the Graduate Division. This normally takes place after the student has made a tentative decision on a dissertation topic. The student should prepare a prospectus of the proposed dissertation research; this should include an appropriate bibliography and preliminary data, if available. This should be submitted to the doctoral committee members at least one month prior to the examination.

The Oral Qualifying Examination may include, but is not necessarily restricted to, questions on the proposed dissertation work. The Oral Qualifying Examination is open only to the members of the doctoral committee and the student. Upon majority vote of the doctoral committee, the Oral Qualifying Examination may be repeated only once.

Doctoral Committee

The doctoral committee consists of at least five (5) faculty members who hold professional appointments. Three (3) of the five (5) must hold appointments in Public Health, two (2) must be "outside" members who hold no appointment in Public Health; one (1) of these must be from the minor field.

The doctoral committee administers the Oral Qualifying Examination after the student has successfully completed the written examination.

Final Oral Examination

A Final Oral Examination is required of all candidates. All members of the doctoral committee must be present for the examination and must read, approve and certify the dissertation. A student will not be considered to have passed the Final Oral Examination with more than one "not passed" vote by the committee. Reexamination after failure is determined on an individual basis.

Areas of Specialization

Areas of specialization offered in the Dr.P.H. degree program and typical course plans, in addition to courses required for the master's degree, are listed below.

Behavioral Sciences and Health Education

Recommended Courses for the Major. Public Health 100B, plus at least two advanced statistics courses and at least four advanced courses from among a list of courses designed and offered by the Division. Students may be required to take 8 units of seminar in Behavioral Sciences and Health Education (PH 286).

Typical Minor Field. A minimum of four graduate courses (16 units) from one of the following: Biostatistics; Environmental Health Science; Epidemiology; Health Services; Population, Family and International Health; or four upper division and graduate courses from one of the following: Anthropology; Economics; Education; Psychology; Sociology.

Electives. Electives are chosen in consultation with adviser.

Biostatistics

Recommended Courses for the Major. Public Health 200B-C; 204E-F; M205A-C; 206A-B; two courses from among the following: 201J, M201E-H, J; two advanced topic courses in Biostatistics; Mathematics 152A-B; or 150A-C. All enrolled doctoral students are encouraged to participate in the Biostatistics Consulting Laboratory for one quarter each year.

Typical Minor Field. Behavioral Sciences, Epidemiology, Health Services, or other with approval of adviser.

Electives. Electives to be selected in consultation with adviser from the following: Mathematics, Biomathematics, survey research methods, operations research, computer data processing, and other appropriate areas.

Environmental Health Science

Recommended Courses for the Major. Courses determined in consultation with adviser.

Minor Field. One minor field relating to environmental health sciences, with approval of adviser. This may be a recognized field within the School of Public Health, such as epidemiology or health services, or within other departments or schools, such as engineering and applied science, management or architecture and urban planning.

Epidemiology

Recommended Courses for the Major. 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.

Typical Minor Fields. Appropriate public health areas from divisions within the School of Public Health or other department with related interests, e.g., Biostatistics, Biology, Microbiology and Immunology, Neurosciences, and other related fields.

Health Services

Recommended Courses for the Major. From 48 to 72 quarter units beyond the master's degree are required. About one-third are 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, the student must spend three to nine months in a supervised residency or practicum experience in one or more health-related organizations. The practicum is usually begun after satisfactory completion of the Written Qualifying Examination.

Typical Minor Fields. Appropriate public health areas, economics, political science, sociology, management, and other related fields.

Nutritional Science

Recommended Courses for the Major. Public Health 260E, 260F, 260G, 260H, 261A, 262 and 263 (may be repeated for credit), 400, 460, 461, 463, 596.

One minor field relating to nutritional sciences, with approval of adviser. This may be a recognized field within the School of Public Health, such as behavioral sciences, epidemiology or health services, or within other departments or schools, such as education, psychology or economics.

Additional Requirements. Additional courses in public health fields, biological sciences, and biostatistics. In the dissertation, emphasis will be community health-oriented.

Population, Family and International Health

Recommended Courses for the Major. Course content for the major field includes courses needed for the Divsional 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 shall be in the Population, Family and International Health Division, including the Divisional Doctoral Seminar. Of the balance, at least 12 units must be in other Divisions of the School of Public Health. The remaining 16 units must be from other departments at UCLA.

Typical Minor Field. One minor field related to population studies, family health or international health, aggregating to 18 units. This may be a recognized field within the School of Public Health, or within other departments or schools.

Ph.D. in Public Health

Degree Information

The Ph.D. is the highest research degree in public health for the student who desires in-depth knowledge in the area of Public Health. Depth of knowledge and research skills are stressed. The minor field must be cognate to the major field. The dissertation must demonstrate the candidate's ability in independent scholarly investigation.

Course Requirements

The course requirements depend upon the Division and field which the student enters, and the study list is chosen in consultation with the Guidance Committee and the adviser in the minor field.

The minor field must be in a field cognate to the major field in Public Health. A strong minor is required, with a minimum of four full graduate courses (16 units) or equivalent from a department that grants a Ph.D. (The Division of Health Services and Behavioral Sciences and Health Education require five full graduate courses (20 units). Biostatistics may be considered cognate to a major in Public Health.

Written and Oral Qualifying Examinations

Before advancement to candidacy, the student must pass Written Qualifying Examinations in the major and the minor fields, a foreign language examination, and the Oral Qualifying Examination. The written examination in the major field is prepared and administered by the Guidance Committee or by the faculty of the Division. The conduct of the written examination in the minor field is the responsibility of the representative from the minor field or the Guidance Committee. One reexamination after failure is allowable; more than one would be granted only in unusual circumstances.

When the student has successfully completed the written examination and is ready to take the Oral Qualifying Examination, a doctoral committee is nominated by the Chair of the Department, and appointed by the Dean of the Graduate Division after consultation with the student, the adviser, and the Division Head. This normally takes place after the student has made a tentative decision on a dissertation

topic. The student should prepare a prospectus of the proposed dissertation research which includes appropriate bibliography and preliminary data, if available. This should be submitted to the doctoral committee members at least one month prior to the oral examination.

The Oral Qualifying Examination may include, but is not necessarily restricted to, questions on the proposed dissertation work. The Oral Qualifying Examination is open only to the members of the doctoral committee and the student. Upon majority vote of the doctoral committee, the Oral Qualifying Examination may be repeated once.

Doctoral Committee

The doctoral committee consists of at least five faculty members who hold professorial appointments. Three of the five must hold appointments in Public Health, two must be "outside" members who hold no appointment in Public Health, one of these must be from the minor field. At least two members of the doctoral committee (one from Public Health and one from another department) must hold the Ph.D.

The doctoral committee administers the Oral Qualifying Examination after the student has successfully completed the written examination, advises the student on his/her course of study and reviews the dissertation.

Final Oral Examination

The Final Oral Examination is required of all candidates. All members of the doctoral committee must be present for the examination and read, approve, and certify the dissertation. A student will not be considered to have passed the Final Oral Examination with more than one "not passed" vote by the committee. Reexamination after failure is determined on an individual basis.

Ph.D.In Biostatistics

Degree Information

Course Requirements

There are no specific course requirements. However, the student's 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. Enrolled doctoral students are encouraged to participate in the Biostatistics Consulting Laboratory for one quarter each year. Recommendation for the degree is based on the attainments of the candidate rather than on the completion of specified courses.

Written and Oral Qualifying Examinations

Written examinations in Biostatistics, in Mathematical Statistics, and in the student's selected third field, are taken before advancement to candidacy. The Biostatistics examination is prepared by the faculty in Biostatistics, the mathematical statistics examination by the faculty of the Mathematics Department, and the third field examination by a qualified person in that field at UCLA.

The Oral Qualifying Examination is taken before advancement to candidacy. Any examination which is failed may be repeated once. The time of reexamination is specified by the Division in the case of the written examinations or by the student's committee in the case of the oral examination. A student who does not take the examination at the designated time forfeits his right to a reexamination.

Doctoral Committee

The doctoral committee consists of at least five faculty members who hold professorial appointments. Three of the five must hold appointments in the major field, Biostatistics, two must be "outside" members who hold no appointment in the major department, Public Health.

The doctoral committee administers the Oral Qualifying Examination after the student has successfully completed the Written Qualifying Examinations. The oral examination is usually a defense of the dissertation proposal.

Final Oral Examination

A Final Oral Examination is required of all candidates. All members of the doctoral committee examine the candidate during the required Final Oral Examination and read, approve, and certify the dissertation. A student will not be considered to have passed the Final Oral Examination with more than one "not passed" vote by the committee. Reexamination after failure is determined on an individual basis.

A copy of the dissertation must be submitted to the Graduate Division and to the Division of Biostatistics.

Graduate Courses

200A. Biostatistics. Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Mathematics 32B, 152B or equivalent. With consent of instructor certain prerequisites may be taken concurrently or waived. Quantitative methods in public health, medicine and biological sciences; statistical theory and application to problems in design and analysis of medical experiments and surveys.

200B-200C. Biostatistics. (1 course each) Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Mathematics 32B, 152B or equivalent. With consent of instructor certain prerequisites may be taken concurrently or waived. 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 and 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. (Formerly numbered 268B.) 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: Mathematics 150C or 152B, a course in computer programming, course 100C, and 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: Mathematics 150C or 152B or course 100D. 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 and 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: 100C, Mathematics 150C or Mathematics 152B, or equivalent and consent of instructor. Statistical methods for the analysis of survival data.

201L. Advanced Demography. Lecture, three hours. Prerequisite: course 102 or equivalent. Calculation of estimates of stable population parameters. Application of stable population concepts to the estimation of fertility rates in absence of vital registration data. Consequences of changes in vital rates. Implications for policy. Ms. Mickey

201M. Introduction to Statistical Methods for Biological Assays. Lecture, four hours. 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. Mr. Chang

203A. Data Base Management Systems. Lecture, three hours; laboratory, two hours. Prerequisites: course 100A, Mathematics 1A; course 112 or 130, Eng 10; or course 403; and 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. Ms. Chern

203B. Systems Analysis for Health Data. Lecture, three hours; laboratory, two hours. Prerequisites: course 203A and 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. M. Myra Chern

204E. Seminar in Biostatistics. (½ course) Discussion, two hours. Prerequisites: course 200B, two courses from 201E-201J series, and consent of instructor. Students present and discuss current developments of methodology and problems in applications of Biostatistics.

204F. Advanced Seminar in Biostatistics. (½ course) Discussion, two hours. Prerequisites: course 200C and consent of instructor. Students and faculty present and discuss current research in Biostatistics. May be repeated for credit. Offered on a S/U grade basis only.

M205A-M205B-M205C. Linear Statistical Models. (Same as Mathematics M279A-M279B-M279C.) Lecture, three hours. Prerequisites: Mathematics 150C or 152B and course 100C, or equivalent. Topics include linear algebra, applied to linear statistical models, distribution of quadratic forms, the Guass-Markov theorem, fixed and random component models, balanced and unbalanced designs.
Mr. Afifi, Mr. Chang

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. Prerequisite: courses in upper division mathematics including statistics and probability. Stochastic processes applicable to medical and biological research. Ms. Dunn, Mr. Massey

207F. Advanced Topics — Mathemstical Epidemiology. Lecture, three hours. Prerequisite: course 207E or equivalent. Courses in upper division mathematics including statistics and probability. Mathematical theory of epidemiology with deterministic and stochastic models, and problems involved in applying the theory. Mr. Massey

207G. Advanced Topics — Statistical Genetics. Lecture, three hours. Prerequisites: courses in upper division mathematics including statistics and probability. Introduction to statistical genetics. Ms. Dunn

207H. Statistical Methods for Research Biological Assays. Lecture, four hours. Prerequisite: course 201M. Topics include statistical methods developed for research assays for which the standard procedures do not apply. Mr. Chang

M207J. Computational Statistics. (Same as Biomathematics M280 and Mathematics M280.) Lecture, three hours. Prerequisites: Mathematics 115 and 150C or equivalent. Introduction to theory and design of statistical programs; pivoting and other technologies used in stepwise regression, non-linear 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

210. Principles of Infectious Disease Epidemiology. Lecture, three hours. Prerequisites: one year sequence of biology and chemistry, course 100A or equivalent, 112, and 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: course 100B (may be taken concurrently), 114, and consent of instructor. Discussion of study designs, research methodology, problems of measurement and analytic techniques used in epidemiologic research.
Mr. Detels and the Staff

211B. Advanced Epidemiology. Lecture, two hours; laboratory, four hours. Prerequisites: 211A, Graduate Standing and consent of instructor. Continuation of course 211A; concentration on selection of appropriate research design, problems of measurement, and analytic techniques commonly used in epidemiologic studies. Mr. Visscher and the Staff

212E. Epidemiology of Cardiovascular Disease. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: course 211A and consent of instructor. Theoretical, practical and controversial aspects of cardiovascular epidemiology in developed and underdeveloped countries.

212G. Epidemiology of Neurologic Disease. (½ course) Lecture and discussion, two hours. Prerequisites: course 211B or equivalent and 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. Lecture, four hours. Prerequisites: course 211B and 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 Injuries. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: courses 110 or 111, 100A, 112 or 114, 155 or equivalent, and consent of instructor. Epidemiologic aspects of non-intentional injury, homicide and suicide; concepts and models in injury etiology; risk factors in injury production; magnitude and impact of injuries on society. Evaluation of preventive strategies in injury prevention. Mr. Kraus

212J. Occupational Epidemiology. Lecture, two hours; discussion, two hours. Prerequisites: course 211A or equivalent and consent of instructor. Methodological considerations, approaches and limitations in epidemiological studies of occupational groups and environments. Mr. Kraus

213. Environmental Epidemiology. Lecture and discussion, four hours. Prerequisites: Chemistry 21, Physics 3C or equivalent, courses 100B, 112, Graduate Standing and 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, 113 or equivalent, and 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. Mr. Schacher, Mr. Work

215A. Epidemiology of Cancer. Lecture and discussion, four hours. Prerequisites: courses 100A, 112, and 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.

215B. Epidemiology of Cancer. Lecture and discussion, four hours. Prerequisites: course 215A and consent of instructor. Environmental carcinogens; experimental and epidemiologic assessment of hazards. Occupational cancer. Cancer legislation and regulation. Application of models to planning cancer control and prevention strategies. Evaluation of screening programs, risk and benefit.

216A. Ecology of Exotic Diseases. Lecture, two hours; discussion, six hours. Prerequisites: course 112, Microbiology 101 and 103 or equivalent, and 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 and 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, ten to twelve hours of outside assignments per week. Prerequisites: courses 211A or 181 and 100B or equivalent, and 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. Includes design and administration of questionnaires, interviewing procedures and the application of non-invasive objective measurements.
Ms. Bourque, Ms. Coulson

218A. Protozoal Diseases of Man. Lecture, four hours. Prerequisites: Microbiology 101 or equivalent, or Biology 105 or equivalent, and consent of instructor. Comprehensive overview of systematics, morphology, biology, host-parasite relationships, public health problems and control of protozoa parasitic in man and animals. May be taken concurrently with 218B. Mr. Ash

218B. Protozoal Diseases of Man. (½ course) Laboratory, four hours. Prerequisite: course 218A (may be taken concurrently). Laboratory methods of diagnosis and microscopic recognition of protozoa parasitic in man and animals. Includes 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 or equivalent; Biology 181 or equivalent; 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. Lecture, four hours. Prerequisites: Microbiology 101 or equivalent or Biology 105 or equivalent, and consent of instructor. 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. May be taken concurrently with 220B. Mr. Ash

220B. Helminthic Diseases of Man. (½ course) Laboratory, four hours. Prerequisite: course 220A (may be taken concurrently.) Diagnosis and practical microscopic recognition of the nematodes, trematodes and cestodes parasitic in man and animals. Pathology produced by these infections is also studied. Mr. Ash

221. Seminar in Epidemiology: Methodology. (½ course) Discussion, two hours. Prerequisites: course 211A or equivalent and consent of instructor. Review of current epidemiologic research contained in recent medical literature. May be repeated for credit. Offered on a S/U grade basis.

222. Seminar in Epidemiology: Infectious and Tropical Disease. (½ course) Discussion, two hours. Prerequisites: course 211A or equivalent and consent of instructor. Review of research on specific diseases of public health importance. May be repeated for credit. Offered on a S/U grade basis.

223. Topics in Theoretical Epidemiology. (½ course) Lecture, two hours. Prerequisites: courses 211AB, 100A-B-D or Mathematics 152A and 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 instructor's consent. Offered on a S/U grading basis.
Mr. Greenland

224. Principles of Epidemiology II. Lecture, four hours; discussion, two hours. Prerequisites: course 112, 100A, upper division biology course, or equivalent, and consent of instructor. Material presented in course 112 will be examined in greater detail. Topics to be covered 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. (½ course) Lecture and discussion, two hours. Prerequisites: courses 100A, 112, 211A. Biologic, quantitative, philosophical and adminstrative 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. (½ course) Lecture, two hours. Prerequisites: course 112, 100A, one upper level biology course, or equivalent, and 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. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: course 100A, 110 or 111, 112, and 410A or 403 or 217 or 405, or equivalent, and consent of instructor. Presentations and discussions of the availability, concepts, content and usefulness of already collected data in public health research. Major emphasis will be on public data such as National Center for Health Statistics surveys, vital statics, census, etc. Ms. Coulson

229. Advanced Seminar in Epidemiology. (½ course) Discussion, two hours. Prerequisites: course 211B and consent of instructor. Students and faculty present and discuss current research in Epidemiology. May be repeated for credit. Offered on a S/U grade basis.

231. Regulation of Health Care in the United States. Lecture, three hours; discussion, one hour. Prerequisites: course 130 plus one course in health care management, health planning, political science, economics or health law or equivalent, and the consent of instructor. Description and analysis of health care regulation by Federal and State governments. Covers regulatory theory and arguments for more competition. Specific topics include facility certification, quality assurance, certificate of need, rate setting, and regulation of physicians and technology. Mr. Fielding

232. Governmental Health Services and Trends. Lecture, four hours. Prerequisites: course 130, two additional upper division social or behavioral sciences courses, and 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: three courses in social sciences, course 130 or equivalent and 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. Mr. Cameron.

234A-234B. Clinical Epidemiology. (½ course each) Prerequisites: prior or concurrent enrollment in courses 100A, 112, 136A and consent of instructor. Introduction to special issues in clinical Health Services Research. Focus on research design and analysis of data. Offered on In-Progress grading basis. Mr. Greenfield

235. Law, Social Change and Health Service Policy. Lecture, four hours. Prerequisites: course 130, two upper-division courses in political science or sociology or equivalent, and consent of instructor. Legal issues affecting policy formulation for environmental, preventive and curative health service programs are examined. Mr. Price

236. Quality Assessment and Assurance. Lecture, one and one-half hours; discussion, one and one-half hours; conference, one hour. Prerequisites: courses 100A, 112, 130 and one additional course in health services or epidemiology, or equivalent, and consent of instructor. Fundamental issues in quality assessment, quality assurance, and the measurement of health status. Mr. Brook

237A-237B. Special Topics in Health Services Research Methodology. Lecture, one hour; discussion, three hours. Prerequisites: courses 100A, 100B, 100C, 130, or equivalent and consent of instructor. In-depth consideration of problems in the application of statistical and other quantitative methods in health services research. Students and faculty critique adequacy of study designs, appropriateness of analyses, and degree to which conclusions are supported by data. Offered on a S/U grade basis. Ms. Cretin, Mr. Shonick

238. Microeconomic Theory of the Health Sector. Lecture, four hours. Prerequisites: Economics 1, 2, course 100A or equivalent; 232; and 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. Lecture, four hours. Prerequisites: courses 130, 138, 182, or equivalent and consent of instructor. Long-term care of the chronically ill elderly is examined from a perspective of political and sociodemographic trends; this includes populations at risk, policy options, and alternative forms of care such as nursing homes, home care, and care by informal support systems. Mr. Kane

240. Health Care Issues in International Perspective. Lecture, four hours. Prerequisites: two courses in health administration, two upper division courses in social sciences, or equivalent, and 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 are probed in the settings of European welfare states, developing nations, and socialist countries. Mr. Roemer

243. Issues in Health Planning. Discussion, three hours; other, three hours. Prerequisites: course 181 or equivalent research course and 444B. In-depth presentation and analysis of current issues of importance to advanced students in health planning.

247. Research Topics in Health Economics. Seminar, four hours. Prerequisites: courses 130, 238, 446 or equivalent, and consent of instructor. 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 and 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 and 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: Chemistry 11A, Mathematics 3A, course 150, and 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. Microbiology of Water Quality. Lecture, three hours. Prerequisites: courses 150, 153, or equivalent. 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, and consent of instructor. Essentials of toxicology, dose response, physical, chemical, or biological agents that adversely affect man and environmental quality. Mr. Mustafa

253B. Environmental Toxicology: Trace Contaminants. Lecture, three hours; discussion, one hour. Prerequisite: course 253A. Essentials of toxicology in relation to trace contaminants.

254. Environmental Decision Systems Analysis. Lecture, four hours; discussion, one hour. Prerequisites: courses 154, 250, Mathematics 3C or equivalent, and 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. (½ course) Lecture, two hours. Prerequisites: Biological Chemistry 101A-101B or equivalent, and consent of instructor. Emphasis on current biological, physical, and chemical sciences relating to environmental topics and review of research literature. May be repeated for credit. Mr. Mah

256. Seminar in Health Effects of Environmental Contaminants (½ course) Discussion, two hours. Prerequisites: Biological Chemistry 101A-101B or equivalent, and consent of instructor. Emphasis on health effects of air, water, environmental pollutants on man and review of research literature. May be repeated for credit. Mr. Mah

260E. Advanced Nutrition: Vitamins. Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, and 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, and consent of instructor. Comprehensive treatment of protein nutrition and metabolic-nutrient interactions. Ms. Swendseid

260G. Advanced Nutrition: Lipids. Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, and consent of instructor. Comprehensive treatment of lipid nutrition and metabolic-nutrient interactions. Ms. Alfin-Slater

260H. Advanced Nutrition: Minerals. (½ course) Lecture, two hours. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, and 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: Chemistry 25 or Biological Chemistry 101A (may be taken concurrently), course 165, and 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. Eckhert

261B. Advanced Laboratory Techniques in Nutritional Science. Lecture, one hour; laboratory, six hours. Prerequisites: course 261A and consent of instructor. Current biochemical methods emphasizing instrumentation. Mr. Eckhert

262. Seminar in Nutrition. (½ course) Lecture, two hours. Prerequisites: courses 162, 167, and one course in 260 series. Review of current literature in nutritional science. Emphasis on methodology and data evaluation. May be repeated for credit. Ms. Swendseid

263. Seminar in Public Health Nutrition. (½ course) Lecture, two hours. Prerequisites: course 162, 167, and one nutrition course in 200 or 400 series. Review of literature in selected areas of public health nutrition. May be repeated for credit.

264E. Clinical Nutrition Problems. (½ course) Lecture, two hours. Prerequisites: Biological Chemistry 101 or 201; one or more 200 level Nutrition courses. Nutrition and nutrient-metabolic interactions in various disease states such as gastro-intestinal disorders, renal disease and liver disease.
Ms. Swendseid, Ms. Alfin-Slater, Mr. Kopple

264F. Clinical Nutrition Problems. (½ course) Lecture, two hours. Prerequisites: Biological Chemistry 101 or 201; one or more 200 level Nutrition courses. Nutrition and nutrient-metabolic interactions in various disease states such as cardiovascular disease, diabetes and obesity.
Ms. Swendseid, Ms. Alfin-Slater, Mr. Kopple

270. Maternal and Child Nutrition. Lecture, four hours. Prerequisites: courses 110, 161, 170 or equivalent, and consent of instructor. Nutrition of mothers, infants and children in countries at various levels of socio-economic development; measures for prevention and treatment of protein-calorie malnutrition; relationship between nutrition and mental development; impact of ecological, socio-economic and cultural factors on nutrition, nutrition education and service. Mr. Jelliffe, Ms. Neumann

271. Medical Anthropology. Lecture, four hours. Prerequisites: courses 110, 112, one upper division course in psychology, sociology, or anthropology or equivalent, and 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. (½ course) Discussion, two hours. Prerequisites: courses 171 and either 110 or 111. 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. Katz, Ms. Neumann

273. Qualitative Research Methodology. Discussion, three hours; laboratory, one hour. Prerequisites: courses 100A, 110, 130, 181 or equivalent, and consent of instructor. Intensive seminar-field course in qualitative research methodology. Emphasis placed on using qualitative methods and techniques in research and evaluation related to health care.
Ms. Scrimshaw

M274A-M274B. Population Policy and Fertility. (1 course each) (Same as Sociology M287A-B.) Lecture, three hours; discussion, one hour. Prerequisites: courses 102, 112, 173 or equivalent, Graduate Standing, and consent of instructor. Analysis of research concerning major issues in population policy with special emphasis on human fertility. M274A is prerequisite for M274B. Ms. Blake

M274C. Seminar in Population Policy and Fertility. (Same as Sociology M287C.) Discussion, one hour; seminar, three hours. Prerequisites: courses M274A-M274B or equivalent, Graduate Standing, and 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. (½ course) Lecture, two hours. Prerequisites: courses 112, 270 or equivalent, and consent of instructor. Biological and economic aspects of human lactation in industrialized and developing countries. Mr. Jelliffe

280. Change Determinants in Health Related Behavior. Lecture, four hours. Prerequisites: course 182, three courses from Psychology 135, 170A, Sociology 152, 154, or equivalent, and 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.

281. Advanced Social Research Methods in Health. Lecture, two hours; laboratory, two hours. Prerequisites: courses 100B, 181, or equivalent, and 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, and consent of instructor. The course focuses on design, implementation, and evaluation of interpersonal communication strategies for health promotion programs. Equal emphasis is on communication theories, models, and empirical research literature and on specific applications in health programs and case studies. Mr. Kar

M283E. Social Epidemiology I. Lecture, two hours; discussion, one hour. Prerequisites: course 112, 183, 3 courses in psychology, sociology or anthropology, or equivalent, and 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, and consent of instructor. Sociological examination of the concepts "health" and "illness" and role of various health professionals especially physicians. Attention given to 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, two hours. Prerequisites: course 182, three courses in psychology, sociology, or anthropology, or equivalent, and 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: course 112, 183, 3 courses in psychology, sociology or anthropology, or equivalent, and consent of instructor. Relationship between sociological, cultural, and psychosocial factors in etiology, occurrence, and distribution of chronic diseases. Topics will 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 and discussion, two hours; reading and preparation of a serious research paper, four hours. Prerequisites: courses 100A, 112 or equivalent, 182 or equivalent, and 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 socio-psychiatric epidemiology, socio-cultural and social-psychological factors in mental disorders.

285. Community Problems in Mental Disorders. Lecture, three hours. Prerequisites: course 182, three upper division or graduate courses in psychology or sociology or equivalent, and 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. (½ to 1 course) Lecture, two hours. Prerequisites: courses M283E, M283F, M283G or equivalent, and 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. Mr. Wilner and the Staff

287. Community Organization in the Health Field. Lecture, two hours; discussion, one hour; Field Work, eight hours. Prerequisites: courses 182, 183, at least two courses in sociology or anthropology, or equivalents, and 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; other, term paper. Prerequisites: courses 183, 280, and 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. Mr. Washington

289. Issues in Program Evaluation. Discussion, three hours; Reading and Research Paper, one hour. Prerequisites: course 281, a course in social sciences, or equivalent and consent of instructor. Advanced seminar which will explore the problems of planning and implementing evaluation research in the context of local demonstration projects.
Mr. Berkanovic

290. Seminar in Community Health Education. (½ course) Discussion, two hours. Prerequisites: courses 288 and 481. In-depth analysis of health education concepts as they relate to the professional practitioner. Mr. Washington

291. Advanced Topics in Health Survey Research Methods. Lecture, two hours; discussion, two hours; other, one hour. Prerequisites: course 281, or equivalent, and 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.

M292. Alcohol and Drug Abuse: Social Policy Perspectives. (¾ course) Prerequisite: consent of instructor. Alternative models of alcohol and other drug addictions will be examined and implications assessed for public policy regarding their control. Prevention efforts and findings from California and national surveys will be considered, with primary emphasis upon alcohol use and abuse. Ms. Beckman

M293. Alcoholism and Drug Abuse Among Women. (Same as Psychiatry and Biobehavioral Sciences M233.) Seminar, four hours. Prerequisites: consent of instructor. Discussion of the psychosocial aspects of abuse of alcohol and other drugs among women. Topics will include etiology, prevention, treatment, hormonal influences, and the role of the family. Emphasis will be placed upon current theoretical perspectives and research findings. Ms. Beckman

400. Field Studies in Public Health. (½ or 1 course) Prerequisite: consent of instructor. Field observation and studies in selected community organizations for health promotion or medical care. Enrolled students must file field placement and program training documentation on form obtainable from Student Affairs Office. Not applicable to minimum course requirements for the M.S. degree. Only four units applicable to minimum total of 44 units required for the M.P.H. degree.

401E. Statistical Methods in Medical Studies. (½ course) Lecture, two hours. Prerequisites: courses 100C or 100D or Mathematics 152B or equivalent and graduate standing in Public Health or related field. Design and analysis of biomedical studies. For non-division majors, may be taken on a Satisfactory (S)/Unsatisfactory (U) grade basis. Ms. Clark

401F. Statistical Methods of Longitudinal Data. (½ course) Lecture, two hours. Prerequisites: courses 112, 100C or 100D or Mathematics 152B or equivalent, and consent of instructor. Design and analysis of longitudinal or panel studies. For non-division majors, may be taken on a Satisfactory (S)/Unsatisfactory (U) grade basis. Ms. Clark

402A. Principles of Biostatistical Consulting. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: courses 100B or 101B and Math 150B or 152B. Presentation of structural format for statistical consulting. Role of statistician and client. Reviews of actual statistician-client interactions and case studies. Mr. Guthrie and Ms. Clark

402B. Biostatistical Consulting. Discussion, two hours; laboratory, two hours. Prerequisites: courses 100C, 402A, or consent of instructor. Principles and practices of biostatistical consulting. May be repeated for credit.

403. Computer Management of Health Data. Lecture, three hours; laboratory, two hours. Prerequisites: courses 100A, 112 and 130, Mathematics 1A, and Engineering 10, or equivalent, and consent of instructor. Concepts of health data management, design and maintenance of large data base 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.
Ms. Chern

404. Principles of Sampling. Lecture, three hours; discussion, one hour. Prerequisites: courses 100B, 112, or equivalent and 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. Mr. Cumberland

405. Demographic Materials and Methods. Lecture, three hours; laboratory, two hours. Prerequisites: courses 100A or 101A, 112 or 114, 180, or equivalent and 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; discussion, one hour. Prerequisites: course 100B, at least two other upper division Public Health courses, and consent of instructor. The use of multiple regression, principal components, factor analysis, discriminant function analysis, logistic regression, and canonical correlation in biomedical data analysis. For non-division majors, may be taken on a Satisfactory (S)/Unsatisfactory (U) grade basis.
Ms. Clark, or A. A. Afifi

410A. Management of Epidemiologic Data. (½ course) Lecture, two hours. Prerequisites: courses 100A, 112 (one may be taken concurrently with consent of instructor). Concepts, collection and management of data with particular emphasis on large scale data bases. Introduction to computer and appropriate selection and use of packaged programs.
Ms. Coulson

410B. Management of Epidemiologic Data. (½ course) Lecture, two hours. Prerequisites: course 410A or equivalent and 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 emphasized. Ms. Coulson

411. Research Resources in Epidemiology. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: courses 100B, 211B, and 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. (½ course) Lecture, one hour; discussion, one hour; other, field trips. Prerequisites: courses 112, 130 or equivalent, and 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: Graduate Standing, courses 100A, 110, 112, 130 or equivalent and 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. Breslow, Mr. Fielding

430. Management of Medical Care Organizations and Programs. Lecture, four hours. Prerequisites: course 131 and consent of instructor. Application of organizational, economic and behavioral science concepts to understanding structure and functions of health care facilities and programs. Mr. Pointer

431. Managerial Processes in Health Service Organizations. Lecture, one hour; laboratory, three hours. Prerequisites: course 430 and consent of instructor. Managerial skills and behaviors applied to components of organizations at several levels: individual, interpersonal, group, inter-group, system, and inter-organization. Unique features of health service organizations are stressed as applications are presented. Mr. Pointer, Mr. Ross

432. Integrative Seminar in Health Services Management. Discussion, four hours. Prerequisite: course 431. Resident and preceptors are responsible for presenting cases of actual administrative problems for solution by teams of students and faculty.
Mr. Pointer, Mr. Ross, Ms. Cretin

433. Contemporary Issues in Health Services Management. Lecture, two hours; discussion, two hours. Prerequisite: course 431. Advanced study of contemporary intramural and extramural issues which affect management of health care facilities.
Ms. Cretin, Mr. Pointer, Mr. Ross

434. Quantitative Methods in Health Services Management. Lecture, four hours. 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.
Ms. Cretin

435. Manpower Management in Health Services Organizations. (½ course) Lecture, two hours. Prerequisites: course 131 or equivalent, and consent of instructor. Introduction to personnel administration and labor relations as they apply to health care facilities. Mr. Pointer

436. Financial Management of Health Service Organizations. Lecture, four hours. Prerequisites: courses 131, 141, 430, or equivalent, and 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. (½ course) Lecture, two hours. Prerequisites: course 131 or equivalent, and 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. Girard

438. Issues and Problems of Local Health Administration. (½ course) Lecture, two hours. Prerequisites: courses 110, 130, another health services course, and 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.

439. Dental Care Administration. (½ course) Lecture, two hours. Prerequisites: courses 100A and 112 or equivalent (may be taken simultaneously) and 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, and consent of instructor. Principles of and systems relating to organization and management of a health facility's health information system.

440B. Health Information Systems: Organization and Management. Lecture, two hours; laboratory, three hours. Prerequisites: course 440A or equivalent, and 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.

441A-441B. Health Record Systems. (½ course each) Lecture, two hours. Prerequisites: courses 100A, 112, 130, or equivalent, and consent of instructor. A is required for B. Advanced study of principles and criteria involved in planning, installing, and administering systems to record, process and retrieve data for records and reports in health and medical institutions and agencies.

442. Principles and Practices of Medical Care Audit. (½ course) Lecture, two hours. Prerequisites: courses 100A, 112, 130, or equivalent, and 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 and Staff

443D. Advanced Hospital Financial Management Simulation. Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisites: courses 130, 141, 436 and 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. Seminar, four hours. Prerequisites: courses 130, 131, 141, 436, or equivalent and consent of instructor. Hospital financial management, including reimbursement management, capital financing, and capital investment analysis, is discussed and analyzed with respect to students' individual residency sites. Mr. Coyne

444A. Information Processing for Health Planners. Lecture, four hours. Prerequisites: courses 100A or 101A, 134, and 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; field work, four hours. Prerequisites: courses 130 or equivalent, 443B, 444A, and consent of instructor. Demonstrating methodology of health planning by involving students in formulation of actual health plan for existing agency in Los Angeles area. Mr. Torrens

445A-445B. Practicum in Health Planning and Policy. Field placement. Prerequisites: courses 100A, 100B, 130 (may be taken concurrently), 233, 248, or equivalent, and consent of instructor. Required of all MSPH Health Planning and Policy students. Preparation for and subsequent analysis of 10-week work experience undertaken during summer between first and second year. Offered on In-Progress, S/U grade basis. Mr. Cameron

446. Financing Health Care. Lecture, four hours. Prerequisites: Economics 1, 2 or equivalent, course 130, and 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, and 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. Lecture, four hours. Prerequisites: courses 130, 232, and additional course in health services, or equivalent and consent of instructor. Examination of social, acturial, 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. Lecture, four hours. Prerequisites: Graduate Standing and courses 100A, 110, 112, 130, or equivalent, and 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. Mr. Breslow

448. Evaluation of Health Services and Programs. Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: courses 100A, 130, 139 or equivalent, and consent of instructor. Analysis of methods and findings of current research and evaluation of personal health services and programs in variety of social contexts. Principles of decision analysis. Emphasis on measurement of outcomes of health service systems. Mr. Hopkins

M449. Health Policy Issues for Dental Professionals. (½ course) (Same as Dentistry M422.) Lecture, two hours. Prerequisites: courses 103, 112, 130, or equivalent, and consent of instructor. Current public health policy issues in dental health including cost, financing, role of government, and quality assurance. Mr. Schoen

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. Ms. Valentine, Mr. Mah

451. Water Quality and Health. Lecture, three hours; discussion, one hour. Prerequisites: course 150, 250, 450, or equivalent, and 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 are discussed. Ms. Valentine

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. (½ course) Lecture, two hours. Prerequisites: courses 112, 150, 154 and 450. Field principles and practices of environmental sanitation as applicable to the sanitarian. Topics to include theory, code enforcement, and inspection procedures for applicable environmental topic areas. Mr. Mushin

460. Principles of Public Health Nutrition. Lecture, three hours; class projects, four hours. Prerequisites: courses 100A, 130 (may be taken concurrently), 162 or equivalent and consent of instructor. Survey of methods, problems, and practices used by health agencies in dealing with community nutrition of population groups. Ms. Hunt, Ms. Murphy

461. Computer Use in Dietary Assessment. Lecture, two hours; laboratory, six hours. Prerequisites: courses 100A, 112 (may be taken concurrently), 162, 163, 460 and consent of instructor. Collection and computer analysis of nutrient intake data for the purpose of nutritional assessment of population groups. Ms. Murphy, Ms. Hunt

462. Nutritional Assessment: Laboratory Assays. (½ course) Lecture, one hour; laboratory, three hours. Prerequisites: courses 162, 165, 167 or equivalent, and one course in 260 series. Biochemical methods for evaluating nutritional status of individuals or population groups. Techniques for measuring vitamins, minerals, lipids and proteins. Ms. Swendseid

463. Practicum in Public Health Nutrition. Discussion, one hour; field research, twelve hours. Prerequisites: courses 400, 460, 461. Analysis of Public Health nutrition problems. Delivery of community nutrition education. Ms. Hunt

470A. International Health Agencies and Programs. Lecture, four hours. Prerequisites: three upper division or graduate courses in health science, social or behavioral science, and 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 173, 175, 270, 470A or 472 or 475. In-depth focus on major health care issues confronting recipient less-developed countries and donors of technical and financial assistance. Mr. Neumann

471A. Reproductive Health Services and Programs. Lecture, two hours; discussion, two hours. Prerequisite: course 172 or equivalent. Examination of U.S. delivery system of pregnancy care, family planning, male-specific and female-specific health care including methods, facilities, personnel and funding.

471B. Current Issues in Reproductive Health. Lecture, two hours; discussion, two hours. Prerequisite: course 471A. Critical review of current public health and socio-political problems in reproductive health. Emphasis on development of feasible solutions and strategies for achieving them.

472A. Maternal and Child Health in Developing Areas. Lecture, four hours. Prerequisites: courses 270, 470A or equivalent, and 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, Mr. Jelliffe

472B. Recent Developments in Maternal and Child Health in Disadvantaged Countries. (½ course) Seminar, two hours. Prerequisites: courses 170, 171, 270, 472A or equivalent and 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 and the Staff

472D. Overseas Refugee Health Programs. (½ course) Lecture, one hour; discussion, one hour. Prerequisites: courses 110 or 111, 112, 270 or 472A, or equivalent and 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. (½ course) Lecture, two hours. Prerequisites: courses 110 or 111, 130, 170 or equivalent and 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; field visits — one time (three hours). Prerequisites: courses 110, 111, 112, 130, 170 or equivalent and consent of instructor. Examination of the health problems affecting infants, children and adolescents in the USA, and exploration of alternatives of priorities, approaches, services, and policies aimed at ameliorating these problems. Ms. Neumann, Mr. Chang

473E. Adolescent Health — Major Issues and Problems. (½ course) Lecture, two hours; field visits, twenty-one hours. Prerequisites: courses 110, 111, 170, 171, 172 or equivalent and 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. (½ course) Discussion, one hour; laboratory, one hour; field visits, two hours. Prerequisites: courses 100A or 103A, 130, 170 or 171, 181 and 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 visit, three hours. Prerequisites: course 110 or 111, 112, 130, 170 or equivalent, and 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 170, 172 or 173, course 130 or equivalent, course 473D, and 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. R. Roemer

474. Self-Care and Self-Help in Community Health. Lecture, two hours; discussion, two hours. Prerequisites: courses 112, 130 and field work internship or equivalent, and 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, 170, 173, 181 or 470A, 270 or equivalent. Theory, guidelines, and team exercise for planning community health/family planning projects in the U.S.A. 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

476. Human Reproduction in Cross-Cultural Perspective. Lecture, two hours; discussion, two hours. Prerequisites: courses 112, 172, 173 or equivalent, and 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

476D. Analysis of Family Health and Fertility Data. Lecture, three hours; laboratory, two hours; assignment, twelve hours. Prerequisites: courses 100B, 125 or 181, 217, or equivalent, and 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 is 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. Lecture with discussion, four hours. 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. (½ course) Lecture, two hours. Prerequisites: courses 270 or 477 or equivalent and consent of instructor. Practicum in anthropometry illustrating how it is used in nutritional assessment. Data presentation and interpretation will be covered. There will be didactic sessions, readings, demonstrations and practical experience in clinical anthropometric techniques. Ms. Neumann

479. Nutrition Programs and Policies for Families in the Third World. Lecture, two hours; discussion, two hours. Prerequisites: course 472 or equivalent and consent of instructor. Programs and policies to improve the nutrition of families in Third World countries are considered with special reference to mothers and young children. Ms. Jelliffe

479D. Nutrition Education and Training: Third World Considerations. (½ course) Lecture, one hour; student participation, one hour. Prerequisite: course 270 or equivalent or consent of instructor. Problems and priorities in nutrition education and training for families and health workers in Third World countries are reviewed, 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, and 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. Ms. Richards

481. Administrative Relationships in Health Education. Lecture, two hours; discussion, two hours. Prerequisites: courses 130, 183, 280, and 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.

482. Practicum in Health Education. (1 or 2 courses) Discussion, two hours; field, six or eighteen hours. Prerequisites: courses 182, 280 and 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, and 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: courses 100A, three courses in social sciences, or equivalent, and consent of instructor. An introduction to the principles of program evaluation as they are applied to public health programs in the community. Mr. Berkanovic

485. Benefit-Cost Evaluation of Health Programs. Lecture, two hours; discussion, two hours. Prerequisites: courses 100A, 112, Economics 102 or equivalent, and consent of instructor. Cost-benefit and cost-effectiveness principles and techniques employed to evaluate public health programs and projects. Mr. Rada

486. Death, Suicide and Homicide: A Public Health Perspective. Lecture, three hours; one hour (field trips, outside readings and reports). Prerequisites: courses 100A or 103, 112, 182, 183 or equivalent, and consent of instructor. Identification and discussion of the role of public health in suicide and homicide prevention, and death and dying. Lectures will range from vital statistics to the role of the behavioral scientist in prevention, intervention and postvention of suicide and homicide. Ms. Allen

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, and 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. E. Brown

490. Professional Writing for Public Health. (½ course) Workshop, four hours. 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 will help participants improve both their prose style and their editorial abilities. Offered on a Satisfactory (S)/Unsatisfactory (U) grade basis only. No degree credit allowed. Mr. Bjork

495. Teacher Preparation in Public Health. (½ course) Prerequisites: eighteen units of cognate courses in area of specialization, and consent of Department Chair. Not applicable on minimum course requirements for a master's degree. Offered on S/U basis only. May be repeated for credit.

501. Cooperative Program. (½ to 2 courses) Prerequisites: Approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus instructor, Department Chair and Graduate Dean. To record enrollment in courses taken under cooperative arrangements with neighboring institutions. No more than 8 units may be applied to the minimum totab course requirements for a master's degree. No credit allowed toward the minimum five graduate course requirement for a master's degree. Offered on a S/U grade basis only.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses) Prerequisites: Graduate Standing, consent of instructor. Individual guided studies under direct faculty supervision. May be repeated for credit; only one course (4 units) will count toward the minimum course requirements for the M.P.H. and M.S. in Public Health degrees. Offered on a letter graded basis only.

597. Preparation for Master's Comprehensive or Doctoral Qualifying Examination. (½ to 2 courses) Prerequisites: Graduate Standing, consent of instructor. May be repeated for credit. May not be used to fulfill any course requirements for the master's or doctor's degrees. Offered on a S/U grading basis.

598. Master's Thesis Research. (½ to 2 courses) Prerequisite: consent of instructor. May be repeated for credit. Only one course (4 units) will count toward the minimum total course requirement for the M.P.H. and M.S.P.H. degrees. No credit allowed toward the minimum five graduate course requirement. Offered on a S/U grading basis.

599. Doctoral Dissertation Research. (½ to 2 courses) Prerequisite: consent of instructor. May be repeated for credit. May not be used to fulfill any course requirements for a degree. Offered on a S/U grading basis.

Radiological Sciences

(Office, BL-428 Center for the Health Sciences)

Zoran L. Barbaric, M.D., *Professor of Radiological Sciences.*
Jorge R. Barrio, Ph.D., *Associate Professor of Radiological Sciences.*
Leslie R. Bennett, M.D., *Professor of Radiological Sciences.*
James D. Collins, M.D., *Associate Professor of Radiological Sciences.*
J. Duncan Craven, M.D., *Adjunct Associate Professor of Radiological Sciences.*
Martin B. Epstein, Ph.D., *Adjunct Associate Professor of Radiological Sciences.*
David O. Findley, Ph.D., *Visiting Lecturer of Radiological Sciences.*
Ernest Garcia, Ph.D., *Adjunct Assistant Professor of Radiological Sciences.*
L. Stephen Graham, Ph.D., *Adjunct Associate Professor of Radiological Sciences.*
Moses A. Greenfield, Ph.D., *Professor of Radiological Sciences.*
Francis E. Holly, Ph.D., *Adjunct Associate Professor of Radiation Oncology.*
Martin W. Herman, Ph.D., *Adjunct Associate Professor of Radiological Sciences.*
Sung-Cheng Huang, D.Sc., *Assistant Professor of Radiological Sciences in Residence.*
Edward A. Langdon, M.D., *Professor of, Radiation Oncology.*
W. N. Paul Lee, M.D., *Assistant Professor of Pediatrics in Residence.*
Norman S. MacDonald, Ph.D., *Professor of Radiological Sciences.*
Carol M. Newton, M.D., Ph.D., *Professor of Biomathematics.*
Amos Norman, Ph.D., *Professor of Radiological Sciences and Radiation Oncology.*
Robert G. Parker, M.D., *Professor of Radiation Oncology.*
Michael E. Phelps, Ph.D., *Professor of Radiological Sciences.*
Richard F. Riley, *Professor Emeritus of Radiation Oncology and Radiological Sciences.*
James B. Smathers, *Professor of Radiation Oncology.*
Alan S. Tesler, *Assistant Professor of Radiation Oncology.*
Ramesh C. Verma, M.D., *Assistant Professor of Radiological Sciences.*
Milo M. Webber, M.D., *Professor of Radiological Sciences.*
Marilyn C. Wexler, M.S., *Adjunct Instructor of Radiation Oncology.*
James S. Whiting, Ph.D., *Adjunct Assistant Professor of Radiological Sciences.*
Gabriel H. Wilson, M.D., *Professor of Radiological Sciences (Chair of the Department).*
James Winter, Ph.D., *Assistant Professor of Radiological Sciences in Residence.*
Rodney H. Withers, Ph.D., *Professor of Radiation Oncology.*

The Master of Science and Ph.D. Degrees in Medical Physics

Admission Requirements. In addition to the University's minimum requirements, prospective candidates for admission are required to have a bachelor's degree with a major in sciences. Also, it is expected that all applicants will have had (a) one year college physics (cal-

culus based) plus the equivalent of UCLA's 8E General Physics: Modern Physics, b) two years of college mathematics including calculus equivalent to UCLA's calculus series: 31A-31B Calculus and Analytic Geometry, 32A Differential Calculus, 32B Integral Calculus, 33A Matrices and Differential Equations, 33B Infinite Series, (c) one year college chemistry, (d) one year college biology, and (e) at least one course in computer programming, FORTRAN, equivalent to UCLA's Engineering 10F Introduction to Programming/FORTRAN, Description and Use of FORTRAN Programming Language.

Scores from the Graduate Record Examination Aptitude Test, taken in the last three years, should be sent to the Department.

Three letters of recommendation are required. If the student already has a master's degree, one of the letters should be from the student's thesis adviser.

A brochure describing the program in Medical Physics may be obtained from the Division Office: Radiological Sciences, Medical Physics Division, AR-259 CHS, UCLA, Los Angeles, CA 90024.

Advising. The Graduate Adviser is Professor Amos Norman who may be contacted at the above address. The Divisional administrative assistant also functions as an adviser regarding Departmental, Graduate Division, and University regulations and procedures.

All entering students are assigned a faculty adviser. Students are expected and encouraged to meet with their advisers as needed regarding their academic programs, particularly at the beginning of each quarter to prepare and approve the study list. The student usually retains this adviser until he/she begins research work for the master's degree, at which time the chair of the thesis or dissertation committee becomes the adviser.

Evaluations of academic progress are made collectively by the faculty of the Division. Special problems regarding graduate students are discussed during monthly faculty meetings. These problems are brought to the attention of the Division either by the individual student, the student representative, the instructor or the adviser. If academic progress is satisfactory, oral evaluations are made; if the progess is unsatisfactory, the student is informed in writing by the Chief of the Division as to facts, suggestions regarding remedial action, and the consequences of unsatisfactory progess. Progress during the first year of graduate study is based primarily upon grade point averages. The policy, as set by the Division, regarding grade point average is: when the grade point average falls below the minimum 3.0, the student is put on probation for the following (second) quarter. A substantial improvement must be made at the end of that quarter; otherwise, the student is subject to dismissal. If, at the end of the third quarter the grade point average is still below 3.0, the student is dismissed from graduate status.

Disqualification and Appeal of Disqualification. Conditions which may lead to termination of graduate status include failure to maintain reasonable progress toward the degree, failure to maintain 3.0 grade point average in three quarters, and failure to complete an acceptable thesis or dissertation.

Tentative decisions to recommend termination are made in a meeting of the teaching faculty. The student is informed and given an opportunity to make an appeal before a final decision is reached.

The Master of Science Degree

Course Requirements. Total number of courses: nine minimum (36) units; number of graduate courses: eight.

For those students wishing to become practicing professional medical physicists, 12 graduate courses are normally required for the M.S. degree. These are the three clinical rotations (Rad Sci 202A, C, D), their prerequisites (Rad Sci 200A and B, 203, 204, 205, 207, 208) and Rad Sci 210, Biomath 210 and Public Health 100A and B. Students are also required to present a seminar on their research before graduation (Rad Sci 260A or B).

For some students with a Medical Physics background or a career objective other than a practicing medical physicist, a more sharply focused curriculum may be advised.

Thesis Plan. All students are required to write a thesis based on a research project. After the student has completed the course requirements, he/she approaches a faculty member to guide this research. If the faculty member agrees to guide the research, he/she becomes chair of the thesis committee. The student, in consultation with the thesis chair, selects two additional committee members. All three members may be selected from within the Department. When a student indicates interest in specific areas of research but is uncertain of the faculty member to approach with a thesis problem, the Graduate Adviser guides him/her in the selection of possible committee members.

Time to Degree. From graduate admission to conferral of the M.S. degree, normal progress is six to eight quarters of full-time enrollment.

500 Series Course Limitations. 500 series courses which may apply toward the degree are Rad Sci 596, 4 units, letter grade only, and Rad Sci 598, 4 units, S/U grading only.

Eight units of 500 series quarter units may apply toward the total course requirements. Four units may apply toward the minimum graduate course requirements.

Ph.D. Degree

Admission to the Doctoral Program. Admission to the doctoral program requires passing the Departmental screening examination, given at the end of the Fall and Spring Quarters each year. This examination covers the content of all Medical Physics courses and includes current research in Medical Physics. Permission to take the examination a second time may be granted by the faculty, but each student's case is reviewed individually. Completion of a master's program is not required. No courses are required for the degree.

Written and Oral Qualifying Examinations. The screening examination for admission to the Ph.D. program should be taken by the end of the sixth quarter in residence. Once the screening examination is passed and the candidate has chosen a research area for the dissertation, he/she should, within a reasonable time frame agreed upon with the dissertation adviser, form a doctoral committee and schedule the first Oral Qualifying Examination. This examination also covers the student's mastery of the Medical Physics curriculum, particularly the areas of the proposed dissertation topics.

Students who do not complete the dissertation within four years of taking the written screening examination may be required to take it again.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination, or dissertation defense, is required.

Time to Degree. It is estimated that a full-time student entering the program with no undergraduate deficiencies can complete the Ph.D. degree in 4.7 years (equivalent to approximately 14 quarters).

Upper Division Courses

199. Directed Individual Study or Research in Medical Physics for Undergraduate Students. (½ to 1 course) Prerequisite: consent of the Graduate Adviser of Medical Physics. Directed individual study in Medical Physics for undergraduate students. Student must submit written proposal outlining study or research to be undertaken. This should be worked out in consultation with the faculty member involved prior to the beginning of the quarter.

Graduate Courses

200A. Physics and Chemistry of Nuclear Medicine. Prerequisite: consent of instructor. Nuclear structure, statistics of radioactive decay, nuclear radiations and their interaction with matter, nuclear decay processes, nuclear reactions, dosimetry, and compartment models. The physical and chemical properties of radioactive preparations used in nuclear medicine.

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

201. Environmental Radiations. The sources, physical properties, and biological hazards of ionizing radiations, ultraviolet and laser light, and microwave and acoustic radiations in the environment. Social benefit vs. technological risk will be evaluated. Mr. Norman

202A-202D. Applications of Medical Physics to Clinical Problems. Selected studies in the clinical use of radiosotopes.

202A. Nuclear Medicine. Prerequisite: 200B or consent of instructor.

202B. Diagnostic Radiology. Prerequisite: 200A, 205, 208 or consent of instructor.

202C. Radiation Therapy. Prerequisitjes: 203, 204, 207, 208 or consent of instructor.

202E-202F. Application of Medical Physics to Clinical Problems: Radiation Therapy. Prerequisite: course intended for physicians only. Lecture/seminar discussion of dosimetric calculations and measurements involving cases under treatment. Written reports on representative problems selected from current literature and/or clinical experience.

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. Smothers

204. Introductory Radiation Biology. Lecture. Effect of ionizing radiation on chemical and biological systems.

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 will illustrate the basic theory.

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.

208A-208B. Medical Physics Laboratory. (1 course each) Prerequisites: courses 203 and 205. Techniques for measuring ionizing and non-ionizing radiation, applications to problems in radiological sciences. Mr. Herman

210. The Physics of Medical Imaging. Prerequisites: courses 200A and 200B, 203, 205. 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. Huang

M216. Computer and Biomathematical Applications in Radiological Sciences. (Same as Biomathematics M216.) Prerequisites: Biomathematics 210 and elementary calculus are recommended. Computer and biomathematical methods will be presented that relate to dosimetry, treatment strategies, biological effects of radiation, and laboratory research in radiotherapy and radiobiology. Mr. Frey, Ms. Newton

260A-260B. Seminar in Medical Physics. (½ course each) Seminar. Joint critical study by students and instructors of the fields of knowledge pertaining to medical physics. Periodic contributions are made by visiting scientists. Research in progress is discussed. Mr. Norman, Mr. Riley

266A-266B-266C. Seminar in Nuclear Medicine. (½ course each) Seminar. Topics of current interest in nuclear medicine. Seminar intended for physicians, radiation physicists, and graduate students.

268. Seminar in Radiopharmaceuticals. (½ course) 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. J. Barrio

481. Angiographic Techniques. (¼ course) Prerequisite: consent of the instructor. Laboratory. Beginning Radiology residents will be taught basic techniques of angiographic procedures, utilizing animals. Mr. Snow

495. Special Studies in Medical Physics. Teaching assistance in graduate laboratory courses under the supervision of a member of the faculty. May be taken on a S/U basis only.

596. Research in Medical Physics. (1 to 3 courses) Directed individual study of research. May be taken any number of times for letter grades; only one course may be used for M.S. credit.

597. Preparation for the Qualifying Examination for the Ph.D. May be taken for one quarter only, on a S/U basis, and is not creditable for the M.S. degree.

598. Research for the Preparation of the Master's Thesis. May be taken any number of times on a S/U basis. A maximum of two courses, or 598 and 596 combined, may be used for M.S. credit.

599. Research for Dissertation. (1 to 3 courses) Prerequisite: satisfactory performance on screening examinations. Research for and preparation of the doctoral dissertation. May be taken any number of times on a S/U basis.

Romance Linguistics and Literature (Interdepartmental)

Shirley L. Arora, Ph.D., *Professor of Spanish.*
Margherita Cottino-Jones, Ph.D., *Professor of Italian.*
Eric Gans, Ph.D., *Professor of French.*
C.P. Otero, Ph.D., *Professor of Spanish and Romance Linguistics.*
Edward F. Tuttle, Ph.D., *Associate Professor of Italian and Romance Linguistics.*
A. Carlos Quicoli, Ph.D., *Assistant Professor of Portuguese and Romance in Linguistics (Chair of the Program).*

The integration of linguistic and literary knowledge is taken to be one of the highest aims of this interdepartmental program.

The Master of Arts Degree

Admission Requirements. The UCLA B.A. in French, Italian, Portuguese, or Spanish, or its 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 his/her proposed program. Three letters of recommendation and the Aptitude Test of the Graduate Record Examination are also required. Students admitted from elsewhere whose preparation is considered deficient in view of their intended specialization are required to make up their deficiencies by taking specified upper division courses. Such courses may be taken concurrently with graduate courses, but they do not count toward the course requirements for the M.A. degree. During his/her first graduate year, the student who knows only the language of his/her major should prepare himself/herself in at least one other Romance language so he/she can take courses in his/her minor no later than the second year of graduate study.

Advising. Each new graduate student must make an appointment with the Chair during the week preceding the start of classes to discuss general requirements and to decide on a program of courses for the quarter. Following this initial interview, the student is required to see his/her adviser at least once a quarter for review of his/her progress towards the degree. Students who have not been authorized to form their guidance committee are advised by their major language adviser: French: Prof. Hassan El Nouty, 160 Haines Hall; Portuguese: A. Carlos Quicoli, 5312 Rolfe Hall; Spanish: Prof. Carlos P. Otero, 5317 Rolfe Hall.

He/she must have his/her study list approved by his/her adviser each quarter before it is signed by the Chair of the Program. Progress reports will be placed in the student's file.

A guidance committee will be constituted for each student upon declaration of his/her specialization and in no case later than the end of the second quarter in the program. The guidance committee is chosen by the student in consultation with the Program Chair and is composed of three faculty members of the sponsoring departments representing the student's major and minor fields of specialization.

Before meeting with his/her guidance committee, each student must complete the Program Proposal form for their approval. The forms are available at the Program office. No later than two weeks after the student's guidance committee meeting, he/she must submit the duly approved Program Proposal to the Interdepartmental Committee for review. Any student who wishes to make substantial changes to his/her Program Proposal must follow the same procedure.

Foreign Language Requirement. In addition to the Romance language of major interest and the Romance language of minor interest, candidates are required to have either UCLA Latin 3 or the equivalent, or UCLA Italian 3 or the equivalent (provided Italian is not their major), whether they specialize in Linguistics or in Literature. The language requirement must be completed no later than the quarter before the quarter in which the student expects to receive his/her degree.

Course Requirements. The M.A. program permits specialization in either Linguistics or Literature and will include a major and a minor. Twelve courses are the minimum requirement of which six courses (at least five of them graduate) must be in the student's 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 the student's major field of study. Each individual program will be worked out in close consultation with the guidance committee. Course 596 may be included twice. Linguistics 100 is required as a prerequisite of all students majoring in the linguistics field. Note: During the first graduate year, the student who knows only the language of his/her major should prepare himself/herself in at least one other Romance language so he/she can take courses in his/her minor no later than in the second year of graduate study.

Teaching Experience. Teaching experience is not required, but is considered desirable. Consult the Chair for information 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. A student may petition for authorization to write an M.A. thesis only after completion of six courses which count toward the degree. It is the responsibility of the student to choose an appropriate topic and find a professor willing to direct the thesis. He/she then petitions the program for authorization to proceed. The Program Chair first examines the petition and then presents it to the Interdepartmental Committee for approval or denial by a majority vote. If the petition is approved, a thesis committee (normally the student's guidance committee) is appointed which consists of a chair in the field of the thesis and two other members of the sponsoring departments who represent the minor fields. After completion of the thesis, the candidate must pass a 2-hour oral examination testing his/her knowledge of the field of this thesis and his/her general competence. Only those students who attain a 3.5 grade point rating in the examination will be encouraged to proceed to candidacy for the Ph.D. degree.

Comprehensive Examination. The Comprehensive Examination is administered by three members of the student's guidance committee, appointed by the Chair. Two of the three committee members will represent the languages and field of the student's major and minor. The written Comprehensive Examination, consisting of one 4-hour examination in the major field, one 2-hour examination in the minor field, and one oral examination not to exceed one hour, will be given each quarter in the second week prior to final examinations. The examination is graded by the comprehensive examination committee, whose decision is final. If a student fails the examination or any part thereof, he/she may retake the failed portions once when the examination is next regularly offered. Only those students who attain a 3.5 grade point rating in the examination will be encouraged to proceed to candidacy for the Ph.D. degree.

Time to Degree. A full-time student with no deficiencies at entrance who takes three courses per quarter should complete the coursework and the Comprehensive Examination in four quarters from graduate admission. Students with a deficiency at entrance and teaching assistants will require more time.

500 Series Course Limitations

Course No.	Unit Value	Type of Grading	Application
596	4-8	Letter	8 units may apply toward the M.A.
597	4-8	S/U	does not count toward the M.A.
598	4-8	S/U	does not count toward the M.A.

Disqualification and Appeal of Disqualification. The Chair of the Program reviews the progress of each student at the end of each academic year. If he/she finds that a student is not making satisfactory progress, he/she proposes a probationary period during which certain conditions must be met. The Chair then advises the student in writing of this decision. If the student is unwilling to comply with the expectations of the Chair, he/she is subject to dismissal. This decision may be appealed to the Interdepartmental Committee.

The Ph.D. Degree

Admission Requirements. The UCLA M.A. in Romance Linguistics and Literature or the UCLA M.A. in French, Italian, Luso-Brazilian Language and Literatures (Portuguese) or Spanish, or the equivalent is required. Three letters of recommendation and the Graduate Record Examination Aptitude Test are also required.

The UCLA M.A. in Romance Linguistics and Literature, or the UCLA M.A. in French, Italian, Luso-Brazilian Language and Literatures (Portuguese), or Spanish, or the equivalent as determined by the Chair. Entering students whom the Chair determines to have obtained the M.A. with distinction are automatically eligible for admission to the Ph.D. program and may file Form 1 ("Notice of Intention to Proceed with the Doctoral Degree") and form their guidance committee; those whose M.A. program registers deficiencies in scope or quality will be required to make up those deficiencies and complete three graduate courses from the offerings of the sponsoring departments, after which they are eligible to file Form 1. Admission to the Ph.D. program will be determined by the Interdepartmental Committee.

Following the determination of the student's eligibility and his/her approval of Form 1, his/her guidance committee will be formed. The latter is composed of a chair, who represents the student's major field of study and under whom the student proposes to write his/her dissertation, and two members representing the minor fields, all members of the sponsoring departments. It is the student's responsibility to constitute the committee and to secure the individual member's consent, which will be transmitted to the Chair in writing. The student meets as soon as possible with his/her guidance committee for the purpose of working out his/her program of courses and setting a tentative date for the Qualifying Examinations. The student prepares a "Study Report" listing the graduate courses he/she has taken at UCLA and elsewhere to be analyzed and discussed at the meeting. That meeting is the most important administrative act in the student's progress toward the Ph.D. The guidance committee has final authority to prescribe the course of study in each individual case. A student who has not met with this committee and placed himself/herself under its direction is not officially in the Ph.D. program.

Advising. Each new graduate student must make an appointment with the Chair during the week preceding the start of classes to discuss general requirements and to decide on a program of courses for the quarter. Following this initial interview, the student is required to see his/her adviser at least once a quarter for review of his/her progress towards the degree. Students who have not been authorized to form their guidance committee are advised by their major language adviser: French: Prof. Hassan El Nouty, 160 Haines Hall; Italian: Prof. Edward F. Tuttle, 354 Royce Hall; Portuguese: A. Carlos Quícoli, 5312 Rolfe Hall; Spanish: Prof. Carlos P. Otero, 5317 Rolfe Hall.

He/she must have his/her study list approved by his/her adviser each quarter before it is signed by the Chair of the Program. Progress reports will be placed in the student's file.

Students who have formed their guidance committee are advised by the chair of that committee, who, moreover, must approve their study list each quarter before it is signed by the Chair of the Program.

The guidance committee is composed of a chair, who represents the student's major field of study and under whom the student proposes to write his/her dissertation, and two members representing the minor fields, all members belonging to the sponsoring departments. The chair of the committee will normally be a tenured professor. It is the student's responsibility to constitute the committee and to secure the individual member's consent, which will be transmitted to the Chair in writing. As soon as possible after official admission into the doctoral program (see below), the student meets with his/her guidance committee for the purpose of working out his/her program of courses and setting a tentative date for the Qualifying Examinations. For this first meeting with his/her guidance committee, each student must complete the Program Proposal form for their approval. The forms are available at the Program office. No later than two weeks after the student's guidance committee meeting, he/she must submit the duly approved Program Proposal to the Interdepartmental Committee for review. Any student who wishes to make substantial changes to his/her Program Proposal must follow the same procedure.

Major Fields or Subdisciplines. The program recognizes two fields of specialization: Linguistics or Literature.

Linguistics. A student specializing in Linguistics may take as his/her major field one of the following: (1) The present-day grammar of the Romance language of his/her 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 his/her 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 Ro-

mance languages, or one other Romance language plus a field of Romance literature.

Literature. The student specializing in Literature may take as his/her major field one of the following fields 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 chosen 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 required in the student's program, Latin 3 or Italian 3, or the equivalent, is required of all students in the interdepartmental program. Students choosing options 2 or 3 in Linguistics or option 1 in Literature also require German, whereas those choosing option 1 in Linguistics or option 2 or 3 in Literature will require another foreign language to be determined by the guidance committee in accordance with the individual's program. A minimum level of acceptable accomplishment in non-Romance languages is passing the Educational Testing Service (ETS) test, where such a test exists. In languages where there is no such test, passing an examination administered by the corresponding language department fulfills the requirements. This foreign language requirement may also be met by evidence of completion of two years of college level courses in the language with grade B or better, or by evidence of fulfillment of 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 quarter in which the Qualifying Examinations are taken.

Teaching Experience. Teaching experience is not required, but is considered desirable. Consult the Chair for information regarding the availability of teaching assistantships.

Course Requirements. In each of the two specializations (Linguistics or Literature) the Ph.D. program will consist of a major and two minors. These courses (a minimum program) will be distributed as follows: Major — 5 courses, First Minor — 3 courses, Second Minor — 2 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 apply, as well as such courses as his/her guidance committee may prescribe, are required. Linguistics 100 is required as a prerequisite of all students majoring in the linguistics field.

Written and Oral Qualifying Examination. At least two months prior to the date of the Qualifying Examinations, the student proceeds to file the form "Nomination of Doctoral Committee" with the Graduate Division through the Program Chair. This form lists the names of the three members of the guidance committee and two additional members from outside the staffs of the participating departments who will also pass on the student's written and oral examinations. It is the student's responsibility to approach the two "outside" members, to secure their consent, which is transmitted to the Chair in writing. The 5-member body thus constituted is the student's official doctoral committee and is so recorded by the Graduate Division.

The Qualifying Examinations are given during the Fall, Winter and Spring Quarters and consist of (a) a 3-hour written examination in the major field; (b) a 2-hour examination in the first minor; and (c) a 1-hour examination in the second minor; and (d) a 2-hour oral examination in the three fields at which time the student's prospectus for the dissertation is also discussed and approved. The candidate is notified of success or failure by the chair of his/her committee immediately following the oral. Failed portions of the examination may be taken once after such remedial preparation as the committee may specify.

Candidate in Philosophy. Students are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

The Dissertation. The dissertation may be on any subject within the general area of Romance Linguistics and Literature. If more than five calendar years elapse between advancement to candidacy and the presentation of the dissertation, the program may require the student to revalidate his/her Qualifying Examination.

Time to Degree. For full-time students with no deficiencies taking three courses per quarter, the following figures are instructive: (a) from graduate admission to the awarding of the M.A.: four quarters; (b) from the award of the M.A. to authorization to form the guidance committee: one quarter; (c) from the formation of the guidance committee to the Qualifying Examinations; 3 to 5 quarters; (d) from the passage of the Qualifying Examinations (advancement to candidacy) to presentation of the dissertation: 6 to 15 quarters. Note: If more than five calendar years elapse between advancement to candidacy and the presentation of the dissertation, the program may require the student to revalidate his/her Qualifying Examination; (e) from graduate admission to the awarding of the degree: 14 to 25 quarters. Normative time-to-degree is seven years.

Disqualification and Appeal of Disqualification. The Chair of the program reviews the progress of each student at the end of each academic year. If he/she finds that a student is not making satisfactory progress, he/she proposes a probationary period during which certain conditions must be met. The Chair then advises the student in writing of this decision. If the student is unwilling to comply with the expectations of the Chair he/she is subject to dismissal. This decision may be appealed to the Interdepartmental Committee.

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:

Introduction to Romance Studies
(Spanish M200)
(Italian 201)

Courses in Linguistics

Grammatical Theory:
(Linguistics 201A-201B, 206A-206B)

Historical Linguistics:
(Linguistics 202A)

Synchronic Linguistics

Advanced Grammar:
(French 201A-201D, 206)
(Spanish 204A-204B, 206)
(Italian 259B)
(Portuguese 204A-204B, 206)

Studies in Linguistics and Dialectology:
(French 261, 262)
(Spanish 256A-256B)

Historical Linguistics

The Development of the Romance Languages:

Northern Gallo-Romance:
(French 204A-204B)

Southern Gallo-Romance:
(French 215E)

Hispano-Romance:
(Spanish M203A-M203B)

Italo-Romance:
(Italian 259A)

Romance Dialectology:
(Italian 259C)
(Spanish 209)

Indo-European Linguistics:
(Indo-European Studies 210, 280A-280B)

Romance Linguistics:
(Linguistics 225G)

Medieval Latin:
(Latin 231A-231B)

Vulgar Latin:
(Latin 232)

History of the Latin Language:
(Latin 240)

Italic Dialects and Latin Historical Grammar:
(Latin 242A)

Palaeography:
(History 219A-219B)

Studies in the History of the Romance Languages:

Gallo-Romance:
(French 215A)

Hispano-Romance:
(Spanish M251)

Italo-Romance:
(Italian 259A-259B-259C, 210A)

Courses in Literature

The Intellectual Background of Romance Literature:
(French 205A-205C)

Studies in Medieval Latin Literary History:
(History 218)

Literary Criticism:
(French 203A-203B-203C)
(Spanish M201)
(Italian 205A-205B)

Studies in the History of Ideas:
(French 260A-260B)

Studies in Literary Criticism:
(French 258A-258B)

Studies in Philosophy and Literature:
(French 259A-259B)

Early Romance Literature

Early Romance Literature:
(French 215B-215E)
(Spanish 222-223, Portuguese 242A)
(Italian 210B-210C, 214A-214G, 215A-215B-215C)

Petrarca:
(Italian 214D, 251)

Studies in Early Romance Literature:
(French 250A-250B)
(Spanish 262A-262B-262C)
(Italian 250A-250D, 252)

Renaissance and Baroque Literature

Renaissance and Baroque Literature:
(French 216A-216H, 217A-217I)
(Spanish 224-226, 237, Portuguese 242A and 243A)
(Italian 216A-E, 217A-217C)

Cervantes:
(Spanish 227)

Studies in Renaissance and Baroque Literature:
(French 251A-251B, 252A-252B, 253A-253B)
(Spanish 264A-264D)
(Italian 253A-253C, 255A-255B)

Modern Romance Literature

The XVIIIth Century:
(French 218A-218D)
(Spanish 230 and 239)
(Italian 218A-218E)
(Portuguese 242B, 243A)

Rousseau:
(French 218B-218C)

The XIXth Century:
(French 219A-219K)
(Spanish 231 and Portuguese 242B and 243B)
(Italian 219A-219F)

The XXth Century:
(French 220A-220P, 221A-221D)
(Spanish 232-235 and 240-245, and Portuguese 242C and 243C)
(Italian 220A-220C)

Studies in the XVIIIth Century:
(French 254A-254B)
(Spanish 277)
(Italian 256A-256B)

Studies in the XIXth Century:
(French 255A-255B)
(Spanish 270A-270B, 278)
(Italian 257A-257B)

Studies in the XXth Century:
(French 256A-256B, 257A-257B)
(Spanish 272A-272D, 280A-280D)
(Italian 258A-258B)

Genre Studies:
Novel: Portuguese 252A, 253A
Poetry: Portuguese 252B, 253B
Theater: Portuguese 252C, 253C
Essay and Short Story: Portuguese 252D, 253D

Slavic Languages and Literatures

(Office, 115 Kinsey Hall)

Aleksandar Albijanić, Ph.D., *Professor of South Slavic Languages and Literatures.*
Henrik Birnbaum, Ph.D., *Professor of Slavic Languages and Literatures.*
Thomas Eekman, Ph.D., *Professor of Slavic Literatures.*
Michael S. Flier, Ph.D., *Professor of Slavic Languages and Literatures (Chair of the Department).*
Marija Gimbutas, Ph.D., *Professor of European Archaeology.*
Kenneth E. Harper, Ph.D., *Professor of Russian Literature.*
Vladimir Markov, Ph.D., *Professor of Russian Literature.*
Michael Shapiro, Ph.D., *Professor of Russian Linguistics and Poetics.*
Dean S. Worth, Ph.D., *Professor of Slavic Languages.*
Michael Heim, Ph.D., *Associate Professor of Czech and Russian Literature.*
Peter Hodgson, Ph.D., *Associate Professor of Russian Literature.*
Rochelle Stone, Ph.D., *Associate Professor of Polish and Russian Literature.*
Alan H. Timberlake, Ph.D., *Associate Professor of Slavic Languages.*

•

Edward Denzler, M.A., *Lecturer in Russian.*

The Department of Slavic Languages and Literatures at UCLA offers M.A. and Ph.D. degrees in Slavic Languages and Literatures.

Admissions Requirements. In addition to the University minimum requirements for study toward an M.A., 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 such that the student 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. Students who do not hold a UCLA M.A. in Slavic Languages and Literatures are required to take the M.A. Comprehensive as a screening examination within one calendar year after admittance and to make up any deficiencies in their 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 the student's academic potential. No admission tests are required, but the Graduate Record Examination is strongly recommended for students applying for financial assistance.

A departmental brochure describing the curriculum in Slavic Languages and Literatures in some detail (graduate and undergraduate) is available by writing to the Graduate Adviser (address given below).

The Department does not utilize its own specialized application form.

Advising. Graduate Adviser: Professor Dean S. Worth, Department of Slavic Languages and Literatures, Kinsey 115, UCLA, Los Angeles, CA 90024.

To assure uniformity and continuity in students' programs, there is one graduate adviser for all students. Students are obliged to meet with the Graduate Adviser at the beginning of each quarter for consultation about their programs and progress toward the degree. The Preferred Program Card is signed after the student and the Graduate Adviser agree upon a program of study for the quarter. Students wishing to enroll in Slavic 596 or 597 must obtain prior permission from the instructor with whom they plan to work before the Graduate Adviser can include the course on the study list. Petitions to alter the study list (Drop/Add) after it has been formulated must be approved by the Graduate Adviser before they are submitted to the Graduate Division.

The Department does not have an institutionalized review procedure of its graduate students.

Major Fields or Subdisciplines. Candidates for the M.A. and Ph.D. degrees choose a specialization in either Literature or Linguistics, with Russian as the principal language and literature respectively. On the Ph.D. level, students by special arrangement may specialize in a language or literature other than Russian.

Disqualification and Appeal of Disqualification. Normally, a student is disqualified from continuing study if he/she fails to pass the M.A. Comprehensive Examination with a "High Pass" or fails to pass the Ph.D. Qualifying Examinations, or does not maintain a 3.0 grade point average. Disqualification for any other reason must be recommended by the Admissions and Support Committee of the Department. The student may appeal to the Department Chair.

The Master of Arts Degree

Foreign Language Requirement. There are two foreign language requirements which must be completed at least one quarter before the quarter in which the student takes the M.A. Comprehensive Examination. (1) Students must pass a departmental Russian language proficiency examination testing the ability to

translate from Russian to English and vice versa. This examination may be retaken each quarter until the grade "Pass" is achieved. (2) Students 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 the fifth quarter of study at UCLA in one of the languages with a grade of "B" or better (equivalent university-level coursework in French or German taken no more than two years prior to the candidate's admittance into the Department may be used to satisfy this requirement at the discretion of the Graduate Adviser).

Course Requirements. *Required of all M.A. students:* Slavic 201 — Old Church Slavic; Russian 102A-B-C — Advanced Grammar and Reading (¾ course each); Russian 112A-B-C — Advanced Conversation and Composition (¼ course each); Russian 204 — Introduction to the History of the Russian Literary Language.

Required of Literature students: Russian 211 — 18th Century Russian Literature; Russian 212 — 19th Century Russian Literature; Russian 213 — 20th Century Russian Literature; one other literature course in the Department. Total number of courses: twelve (36 units), including five (20 units) graduate courses.

Required of Linguistics students: Slavic 202 — Introduction to Comparative Slavic Linguistics; Russian 221 — Advanced Russian Phonology (½ course); Russian 222 — Advanced Russian Morphology (½ course); Russian 225 — Russian Syntax; two graduate courses in Russian literature. Total number of courses: fourteen (40 units), including eight (28 units) graduate courses.

Thesis or Comprehensive Examination Plan. The Department uses only the 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, but will be accepted only if the candidate has satisfied the foreign language requirement in French or German and has passed the Russian Language Proficiency Examination. Examinations are offered at the end of each quarter. After a student has declared his/her 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 (a) Linguistics, including a knowledge of Russian phonology and grammar and an acquaintance with comparative Slavic linguistics, Old Church Slavic, and the history of the Russian literary language; or (b) Literature, including an acquaintance with the history of Russian literature from its origins to the present and a knowledge of the major developments and figures of the 19th and early 20th centuries. The written examination is graded "Pass" or "Fail". A student receiving "Pass" on the written examination will be admitted to a 2-hour oral examination, which is designed to test the fields of his/her major interest and general background. It will be conducted partly in Russian. Although all faculty members in the major field may read the written examination, it is the student's committee which conducts the oral examination and evaluates the student's performance.

The combined performance of the student in the written and oral examinations is graded "High Pass", "Pass", or "Fail". A grade of "Pass" or "High Pass" is necessary to receive the M.A. degree; the grade of "High Pass" is necessary to enter the Ph.D. program. Students may retake the examination once, not later than one calendar year after the first attempt.

Time to Degree. From graduate admission to conferral of the degree, normal progress is six quarters. (Coursework is normally completed in five quarters.) It is common for students without a UCLA bachelor's degree in Slavic Languages and Literatures to take three to six additional courses to make up deficiencies. These courses are *not* applicable toward the degree.

For teaching assistants and research assistants the program may take slightly longer (usually up to a year).

The M.A. examination must be taken within two calendar years from the time of admission to the Graduate Division (time spent in removing deficiencies, to a maximum of one year, does not count toward this 2-year period).

500 Series Course Limitations. Courses in the 500 series may not be counted as meeting course requirements in the master's program.

The Ph.D. Degree

Admission to the Doctoral Program. A student is formally admitted to the Ph.D. program on completing the following requirements: (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.

For students entering UCLA with an M.A. from another institution, the Comprehensive Examination serves as a screening examination for admission to the doctoral program. All students are allowed to retake the examination once in order to achieve the necessary "High Pass" for admission to the Ph.D. program.

Foreign Language Requirement. Students must demonstrate an ability to read scholarly literature in both French *and* German by completing one of the three options listed under Master's Degree. With departmental approval, a student 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 points on the ETS examination for the second of his/her French and German examinations (i.e., in the examination in either French or German). The Department Chair prescribes the manner in which the student should be tested in the substituted language. A 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 Chair of the Department recommends the formation of a doctoral committee, students must have been officially admitted to the doctoral program and have taken the following required courses:

Linguistics students: Slavic 221 — Introduction to East Slavic Languages; Slavic 222 — Introduction to West Slavic Languages; Slavic 223 — Introduction to South Slavic Languages; four advanced linguistics courses or seminars (numbered above 220).

Recommended preparation for Linguists: Linguistics 100, 103, 110, 120A-B, M150.

Literature students: Two courses chosen from Slavic 230A-B-C — Comparative Slavic Literature; Russian 251A — Old Russian Literature; three additional seminars.

Candidates specializing in literature are advised to acquire a sound general knowledge of modern Western European literature.

Written and Oral Qualifying Examinations. The Department Chair arranges a brief meeting of the candidate and the Graduate Adviser in order to form a 3-member departmental component of the examination committee, including a chair. In consultation with the candidate, the committee chair obtains the agreement of two non-departmental members to serve on the committee. The committee will conduct the Ph.D. Qualifying Examinations; in the case of Linguistics candidates, the committee will also evaluate material submitted to satisfy the research paper requirement, which necessitates the forming of the committee at least one quarter before the quarter in which the comprehensive written examination is to be taken (see below).

Research Paper Requirement: Linguistics. Candidates in Linguistics 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 quarter in which the comprehensive written examination is to be taken.

Comprehensive Written Examination(s). 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 3-hour Qualifying Examination given at the end of each quarter. The nature and scope of this examination is prescribed for each candidate. Candidates are expected to demonstrate a detailed mastery of linguistics, including Old Church Slavic, comparative Slavic linguistics, and the structure and history of one major and one or two minor Slavic language(s) (from the Western and/or Southern groups), which presupposes knowledge equivalent to one year's study of a second and third Slavic language or two year's study of a second Slavic language. For Literature students, there are two written 3-hour Qualifying Examinations given one week apart at the end of each quarter. The nature and scope of these examinations are prescribed for each candidate. Candidates are expected to demonstrate a detailed mastery of literature, including Russian literature from its origins to the present, and a basic knowledge of the major figures and developments in the literature of at least one Slavic country other than Russia, which presupposes knowledge equivalent to one year's study of a second Slavic language. The written examination(s) will be graded either "Pass" or "Fail".

Comprehensive Oral Examination. A student receiving "Pass" on the written examination(s) is admitted to a 2-hour oral examination, which is designed to test the fields of his/her major interest and general background. The oral examination typically includes discussion of the candidate's dissertation topic.

After considering the candidate's overall performance in both the oral and written examinations, the committee assigns a cumulative grade of "Pass" (this entitles the student to write a dissertation in order to receive the Ph.D. degree) or "Fail". At the committee's discretion, the candidate may be required to retake any or all portions of the Ph.D. examinations, no later than one calendar year after the first attempt.

Upon successful completion of the Qualifying Examinations, the candidate consults with the committee (and especially its chair) concerning a dissertation topic. Within two quarters (or one quarter and a summer) after passing the exams, the candidate must prepare a prospectus of the dissertation, setting forth broad outlines of his/her proposed treatment. A copy of the prospectus must be made available to each faculty member in the Department; the committee chair may call a meeting, if necessary, to consider comments of faculty members. The dissertation committee is typically, but not necessarily, the same as the examination committee.

Slavic Colloquium Requirement. The candidate is required to deliver a formal lecture in the Slavic Colloquium no later than two calendar years after advancement to candidacy.

Doctoral Committee. The Department does not set any conditions besides those of the Graduate Council on the formation of doctoral committees.

Final Oral Examination Following Completion of the Dissertation. A Final Oral Examination is required except in case of geographically imposed hardship on the part of the candidate.

Time to Degree. Students normally take from three to four quarters to gain formal admittance into the doctoral program and four to six additional quarters to complete required coursework. It is common for students without a UCLA M.A. in Slavic Languages and Literatures to take three to six additional courses to make up deficiencies.

For teaching and research assistants the program may take slightly longer.

The Qualifying Examinations must be taken within two years of the date of admission to the doctoral program. The dissertation must be completed within three calendar years of the date when the Qualifying Examinations are passed.

The normative time-to-degree from graduate admission to award of the degree is 18 quarters (six years).

Candidate in Philosophy Degree. The Candidate in Philosophy degree is available upon advancement to candidacy for the Ph.D. degree.

Slavic

Upper Division Courses

M171. Slavic Folklore in North America.

177. Baltic Languages and Cultures. (½ course).

M178. Southeast European Folklore and Ethnography.

M179. Baltic and Slavic Folklore and Mythology.

199. Special Studies. (½ to 2 courses).

Graduate Linguistic Courses

201. Introduction to Old Church Slavic. Three hours weekly. Introduction to phonology and grammar; readings. Required for the M.A. (Linguistics, Literature).

202. Introduction to Comparative Slavic Linguistics. Three hours weekly. Introduction to the comparative phonology and grammar of the Slavic languages. Required for the M.A. (Linguistics).

221. Introduction to East Slavic Languages. Three hours weekly. Prerequisite: Slavic 202. Recommended preparation: Russian 102A-102B-102C or Ukrainian 101A-101B-101C. Introduction to the structure and history of the East Slavic languages. Required for the Ph.D. (Linguistics).

222. Introduction to West Slavic Languages. Three hours weekly. Prerequisite: Slavic 202. Recommended preparation: Czech 102A-102B-102C or Polish 102A-102B-102C. Introduction to the structure and history of the West Slavic languages. Required for the Ph.D. (Linguistics).

223. Introduction to South Slavic Languages. Three hours weekly. Prerequisite: Slavic 202. Recommended preparation: Serbo-Croatian 103A-103B-103C or Bulgarian 103A-103B-103C. Introduction to the structure and history of the South Slavic languages. Required for the Ph.D. (Linguistics).

224. Introduction to Ukrainian and Belorussian. Three hours weekly. Prerequisite: Slavic 202. Introduction to the history and structure of Ukrainian and Belorussian.

241A-241B. Advanced Old Church Slavic. Three hours weekly. Prerequisite: Slavic 201. 241A. Advanced readings in canonical texts. 241B. East, West and South Slavic recensions of Church Slavic.

242. Comparative Slavic Linguistics. Three hours weekly. Prerequisite: Slavic 202. Selected topics in the development of Common Slavic.

251. Introduction to Baltic Linguistics. Three hours weekly. Prerequisite: Slavic 202. Introduction to Baltic linguistics, with special attention to the relationship between Baltic and Slavic.

261. Slavic Paleography. Three hours weekly. Prerequisite: Slavic 201. Introduction to Slavic paleography: inscriptions, birchbark letters, Glagolitic and Cyrillic texts.

262A-262B. West Slavic Linguistics. Three hours weekly. Prerequisite: Slavic 222. 262A. Lekhitic. 262B. Czechoslovak, Sorbian.

263A-263B. South Slavic Linguistics. Three hours weekly. Prerequisite: Slavic 223. 263A. Serbo-Croatian, Slovene. 263B. Bulgarian, Macedonian.

281. Seminar in Slavic Linguistics. Three hours weekly. 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. Three hours weekly. Selected topics. May be repeated for credit with consent of instructor and Graduate Adviser.

Graduate Literature Courses

230A-230B-230C. Comparative Slavic Literature. Three hours weekly. Recommended preparation: upper-division courses in Czech, Polish, Russian and Yugoslav literatures. 230A. Middle Ages through Baroque. 230B. Classicism to Romanticism. 230C. Realism to Modernism. Two quarters required for the Ph.D. (Literature).

290. Seminar in Comparative Slavic Literature. Three hours weekly. Prerequisites: Slavic, 230A-230B-230C. Reading knowledge of one Slavic language in addition to Russian is recommended. Selected topics involving more than one Slavic literature or Slavic and Western literatures. May be repeated for credit with consent of instructor and the Graduate Adviser.

295. Seminar in Literary Analysis. Three hours weekly. Prerequisite: Reading knowledge of one Slavic language in addition to Russian is recommended. Selected topics from various Slavic or from Slavic and Western literatures with an emphasis on analytic methods. May be repeated for credit with consent of instructor and Graduate Adviser.

Individual Study and Research

596. Directed Individual Study or Research. (½ to 2 courses) Prerequisites: consent of instructor and the Graduate Adviser.

597. Preparation for the Comprehensive Examination for the Master's Degree or the Qualifying Examination for the Ph.D. (½ to 2 courses) Prerequisites: consent of instructor and the Graduate Adviser.

599. Research for Dissertation. (½ to 2 courses)

Bulgarian

103A-103B-103C. Elementary Bulgarian.

154. Survey of Bulgarian Literature.

Czech

102A-102B-102C. Elementary Czech.

102D-102E-102F. Advanced Czech.

155A-155B. Czech Literature.

Polish

102A-102B-102C. Elementary Polish.

102D-102E-102F. Advanced Polish.

152A-152B. Survey of Polish Literature.

160. Polish Romanticism.

280. Seminar in Polish Literature. Three hours weekly. Selected topics in Polish prose, poetry and drama. May be repeated for credit with consent of instructor and Graduate Adviser.

Russian

Language Courses (Upper Division)

101A-101B-101C. Advanced Russian (¾ course each).

102A-102B-102C. Advanced Grammar and Reading (¾ course each). Required for the M.A. (Linguistics, Literature).

111A-111B-111C. Conversation and Composition. (¼ course each).

112A-112B-112C. Advanced Conversation and Composition. (¼ course each). Required for the M.A. (Linguistics, Literature).

Linguistics Courses (Upper Division)

121. Russian Phonology.

122. Russian Morphology.

123. Historical Commentary on Modern Russian.

Literature and Civilization Courses (Upper Division)

100. The Russian Novel in Translation.

118. Survey of Russian Literature to Pushkin.

119. Survey of Nineteenth-Century Russian Literature.

120. Survey of Twentieth-Century Russian Literature.

124A-124F. Studies in Russian Literature.

125. The Russian Novel in Its European Setting.

126. Survey of Russian Drama.

130A-130B-130C. Russian Poetry.

134. Pushkin.

140A-140D. Russian Prose.

M150. Russian Folk Literature.

M170. Russian Folklore.

193. Seminar in Russian Literature.

Graduate Linguistics Courses

203. Higher Course in Russian. (½ course) Two hours weekly. Prerequisite: Russian 102C. Reading advanced texts; advanced composition, conversation; stylistics. Required two quarters/year of all enrolled post-M.A. students. May be repeated for credit. Grading basis S/U only.

204. Introduction to the History of the Russian Literary Language. Three hours weekly. Prerequisites: Slavic 99, Russian 123. Survey of literary Russian in its cultural and historical setting. Required for the M.A. (Linguistics, Literature).

210. Readings in Russian Historical Texts. Three hours weekly. Prerequisite: Slavic 201 or consent of instructor. Readings in early Russian chronicles and other documents of historical interest.

221. Advanced Russian Phonology. (½ course) Two hours weekly. Prerequisites: Russian 102A-102B-102C, 121 (may be taken concurrently). Advanced study and analysis of problems in Russian phonology. Required for the M.A. (Linguistics).

222. Advanced Russian Morphology. (½ course) Two hours weekly. Prerequisites: Russian 102A-102B-102C, 122 (may be taken concurrently). Advanced study and analysis of problems in Russian inflection and derivation. Required for the M.A. (Linguistics).

225. Russian Syntax. Three hours weekly. Prerequisites: Russian 102A-102B-102C (may be taken concurrently). Survey of Russian syntax and grammatical categories. Required for the M.A. (Linguistics).

241. Topics in Russian Phonology. Three hours weekly. Prerequisite: Russian 221. Selected topics in Russian phonology.

242. Topics in Russian Morphology. Three hours weekly. Prerequisite: Russian 222. Selected topics in Russian inflection and derivation.

243. Topics in Historical Russian Grammar. Three hours weekly. Prerequisite: Russian 123; Slavic 221. Selected topics in Russian historical phonology, morphology, and syntax.

263. Russian Dialectology. Three hours weekly. Prerequisite: Slavic 221. Phonology and grammar of modern Great Russian dialects.

264. The History of the Russian Literary Language. Three hours weekly. Prerequisites: Slavic 201, Russian 204. The evolution of literary Russian from the eleventh to twentieth centuries. Lectures and analysis of texts.

265. Advanced Russian Syntax. Three hours weekly. Prerequisite: Russian 225. Traditional and generative approaches to Russian syntax.

266. Russian Lexicology. Three hours weekly. Examination of the formal and semantic structure of the Russian lexicon.

Graduate Literature Courses

211. Eighteenth-Century Russian Literature. Three hours weekly. Lectures and readings in major and secondary writers. Analysis of selected literary works. Required for the M.A. (Literature).

212. Nineteenth-Century Russian Literature. Three hours weekly. Lectures and readings in major and secondary writers. Required for the M.A. (Literature).

213. Twentieth-Century Russian Literature. Three hours weekly. Lectures and readings in major and secondary writers. Required for the M.A. (Literature).

251A-251B. Old Russian Literature. Three hours weekly. 251A. Survey of Old Russian Literature from the beginnings through the Kievan and the Muscovite periods up to the end of the seventeenth century. 251B. Detailed discussion of specific writers, periods or genres. 251A required for the Ph.D. (Literature).

270. Russian Poetics. Three hours weekly. Prerequisites: Russian 130A-130B-130C. Recommended as preparation for Russian 290. 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 eighteenth through twentieth centuries.

290. Seminar in Russian Poetry. Three hours weekly. Prerequisites: Russian 130A-130B-130C. Recommended preparation: Russian 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. Three hours weekly. Prerequisite: Russian 251A. Selected topics from the eleventh through seventeenth centuries. May be repeated for credit with consent of instructor and Graduate Adviser.

291B. Seminar in Eighteenth-Century Russian Literature. Three hours weekly. Prerequisite: Russian 211. Selected authors and works from eighteenth- century poetry, prose and drama. May be repeated for credit with consent of instructor and Graduate Adviser.

292. Seminar in Nineteenth-Century Russian Literature. Three hours weekly. Prerequisite: Russian 212. Selected authors and works from nineteenth-century poetry, prose and drama. May be repeated for credit with consent of instructor and Graduate Adviser.

293. Seminar in Twentieth-Century Russian Literature. Three hours weekly. Prerequisite: Russian 213. Selected authors and works from twentieth-century poetry, prose and drama. May be repeated for credit with consent of instructor and Graduate Adviser.

294. Seminar in Russian Literary Criticism. Three hours weekly. Prerequisites: Russian 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 will be included. May be repeated for credit with consent of instructor and Graduate Adviser.

Serbo-Croatian

103A-103B-103C. Elementary Serbo-Croatian.

103D-103E-103F. Advanced Serbo-Croatian.

113A-113B-113C. Advanced Reading and Composition.

154A-154B. Yugoslav Literature.

Slovak

222. The Structure of Slovak. Three hours weekly. Prerequisites: Slavic 202; Slavic 222 recommended. Introduction to the phonological and morphological structure of the Slovak language, especially as contrasted with Czech.

Ukrainian

101A-101B-101C. Elementary Ukrainian.

152. Ukrainian Literature.

Non-Slavic Languages of Eastern Europe

Lithuanian

101A-101B-101C. Elementary Lithuanian.

Romanian

99. Introduction to Romanian Civilization.

101A-101B-101C. Elementary Romanian.

152. Introduction to Romanian Literature.

201. Romanian as a Romance Language. Three hours weekly. 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.

Social Welfare

(Office, 200 Dodd Hall)

Jerome Cohen, Ph.D., *Professor of Social Welfare.*
Maurice F. Connery, D.S.W., *Professor of Social Welfare (Chair).*
Jeanne M. Giovannoni, Ph.D., *Professor of Social Welfare. (Chair, Doctoral Program Committee).*
Alfred H. Katz, D.S.W., *Professor of Public Health and Professor of Social Welfare.*
Harry H. L. Kitano, Ph.D. *Professor of Social Welfare and Professor of Sociology.*
Nathan E. Cohen, Ph.D., *Emeritus Professor of Social Welfare.*
Donald S. Howard, Ph.D., L.H.D., *Emeritus Professor of Social Welfare.*
Elliot T. Studt, D.S.W., *Emeritus Professor of Social Welfare.*
Rosina Becerra, Ph.D., *Associate Professor of Social Welfare.*
Warren Haggstrom, Ph.D., *Associate Professor of Social Welfare.*
Doris S. Jacobson, Ph.D., *Associate Professor of Social Welfare.*
Manuel R. Miranda, Ph.D., *Associate Professor of Social Welfare.*
Alex J. Norman, D.S.W., *Associate Professor of Social Welfare.*
Harry Wasserman, D.S.W., *Associate Professor of Social Welfare.*
Diane de Anda, Ph.D., *Assistant Professor of Social Welfare.*
Carol W. Williams, D.S.W., *Assistant Professor of Social Welfare.*
Laura S. Wiltz, Ph.D., *Assistant Professor of Social Welfare.*

•

Maxine Jackson, M.S.W., J.D., R.N., *Visiting Lecturer in Social Welfare.*
James Karls, Ph.D., *Visiting Lecturer in Social Welfare.*
Stan Katz, Ph.D., *Visiting Lecturer in Social Welfare.*
Katherine M. Kolodziejski, D.C.S.W., *Field Work Consultant.*
Jane E. Kurohara, M.S.W., *Field Work Consultant.*
Joanne Mantell, *Visiting Lecturer in Social Welfare.*
Rose Monteiro, M.S.W., *Visiting Lecturer in Social Welfare.*
Joseph Nunn, M.S.W., *Field Work Consultant.*
Mary Seguin, D.S.W. *Field Work Consultant.*
David Shapiro, Ph.D., *Visiting Lecturer in Social Welfare.*
Winifred E. Smith, M.S.W., *Field Work Consultant, Emeritus.*
Bernice Sokol, M.S.W., *Adjunct Lecturer in Social Welfare.*
Jaime Soliz, M.S.W. *Field Work Consultant (Chair of Admissions and Student Affairs).*

The School of Social Welfare is a graduate professional school whose primary objective is to prepare students not only for successful careers but also for imaginative leadership in the social welfare field. The educational program is based on the premise that all students need to acquire a common body of knowledge and basic skills, and a common understanding of the philosophy and values of the profession, as a sound foundation for the development of more specialized knowledge and skills along the lines of each student's interests, and the needs of the field.

In addition to the M.S.W. program in Social Welfare, the School offers a doctoral program of study leading to the D.S.W. It is designed to prepare candidates who wish to train for careers in teaching, research, administration and high level practice positions. Courses are scheduled in the Graduate School of Social Welfare and in schools and departments of related disciplines and professions.

Master of Social Welfare Degree

Admission Requirements. 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 the social science and social welfare subjects as prerequisite undergraduate preparation for graduate study in the field of social work. Completion of courses in psychology, sociology and statistics is ordinarily expected.

A grade point average of 3.0 or better is required in all courses taken during the junior and senior years. However, applicants who have a grade point average of between 2.95 and 3.0 may be considered on an individual basis when there is clear evidence of capacity for academic achievement and professional development. In addition to an acceptable academic record and completion of the above preparatory courses, 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 requirements for the degrees.

An official copy of the score from the Aptitude Test of the Graduate Record Examination is required, as are official transcripts of record from every school attended since high school. Results from the Graduate Record Examination must be submitted prior to any evaluation of the application for admission. GRE scores must be less than five (5) years old, and may be repeated to achieve a higher score, if desired. The GRE is given several times a year in various locations in the United States and foreign countries. Applications and information may be secured either from the Graduate Admissions Office of UCLA or a geographically convenient school, or from the Educational Testing Service. The Southern California Regional Office of the Educational Testing Service is located at: 2200 Merton Avenue, Los Angeles, CA 90041. In addition, foreign students whose native language is other than English and whose higher education was not obtained in an English-speaking country are required to take the Test of English as a Foreign Language (TOEFL). The School may request a student to 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.

Write for the departmental brochure and applications for admission to UCLA School of Social Welfare Admissions, 200 Dodd Hall, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024.

Admission to the School of Social Welfare requires simultaneous application to (1) the School of Social Welfare for admission to the graduate program, and (2) the Graduate Division of the University of California for admission to graduate status in this University. Both applications and the School brochure can be obtained upon written request to the above address, or by calling (213) 825-7737.

Advising

Graduate Adviser: Mr. Jaime Soliz, Chair of Admissions and Student Affairs, UCLA School of Social Welfare, 200 Dodd Hall, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024.

On entering the School, each student is assigned an adviser whose responsibility it is to counsel the student concerning his/her program of study and progress toward the fulfillment of the degree requirements. The student may request a change in advisers at any time during the course of study, submitting this request to the Dean either through the current adviser or directly.

Each quarter, a written summary of the student's School of Social Welfare grades is provided through the Office of Admissions and Student Affairs, 200 Dodd Hall. Since no official grade is entered for the practicum course until the Spring Quarter each year, an unofficial in-progress grade of satisfactory or unsatisfactory is maintained within the School to effect action to help achieve graduate standards. The overall assessment of progress is monitored by the Graduate Adviser.

Ordinarily, students are expected to meet with advisers twice each quarter and more frequently if students are experiencing difficulties in their coursework or if situations in their personal life are affecting their studies. When indicated, a statement of any relevant data or action taken or contemplated of concern to other faculty working with the student, is entered into the student's record. If a student falls below the established graduate standard (a grade point average of 3.0), a faculty committee consisting of the student's adviser and at least two other faculty members is convened to recommend appropriate action to the Dean.

Major Fields or Subdisciplines. Concentrations offered: Administration specialization, Casework, Child and Family Welfare, Community Organization, Health, and Mental Health.

Course Requirements. A total of 72 units in courses of the School of Social Welfare curriculum are required for the M.S.W. degree. The required courses include three courses in social welfare policy and services; five courses in the human behavior and social environment sequences; five courses in methods of social work practice; three courses in social welfare research; plus six quarters of field instruction.

Appropriate substitutions or waivers may be made by the Dean. To the extent that scheduling allows, and with permission from the Dean, students may take courses in other graduate schools of the University in fulfillment of the degree requirements.

Thesis or Comprehensive Examination Plan. *Thesis Plan.* While no University-approved specific 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. Successful passing of an oral Comprehensive Examination is required of all candidates for the M.S.W. degree in the Spring Quarter of the student's second year of study. The comprehensive examination committees are appointed by the Dean, each consisting of at least two faculty members. Committees are appointed in the Spring Quarter, and are responsible for examining a selected group of students. The examination covers the entire range of the candidate's program of study.

Time to Degree. Students in the M.S.W. degree program are expected to be in full-time attendance and to work without interruption toward the degree. The requirements for the M.S.W. degree should be met ordinarily within two consecutive years (six quarters). Course scheduling is predicated on this understanding. In rare exceptions, students may be admitted for study on a part-time basis which permits completion of the first-year academic courses and field instruction over a period of two academic years. The second-year program of study requires concurrent course and field instruction and necessitates enrollment on a full-time basis.

500 Series Course Limitations. With the approval of the instructor and the Dean, students may substitute tutorial studies of comparable material in the 500 series for either required or elective courses. Only 596A (Special Study and Research for the Master's Degree) and 597A (Preparation for the Comprehensive Examination — Master's Degree) may be taken. Each course has variable unit values, from 2 to 8 units possible. For 596A, letter grading is used, and for 597A, S/U grading is used. A maximum of 9 units of 500 series courses may apply toward the entire graduate-course requirement for the Master of Social Welfare degree.

Disqualification. All students are expected to maintain a level of performance in both the academic and practicum components of the curriculum consistent with the standards and procedures of the Graduate Division of the University. In addition, as a professional school, the School of Social Welfare reserves the right to terminate at any point in their program, students who fail to demonstrate in classwork, field instruction and professional relations, those standards essential to the responsible practice of social work (even though the academic work performed by such students may be satisfactory). Such action shall be taken by the Dean only on recommendation of a committee composed of at least three members of the faculty. The student involved in such review shall be permitted to appear before this committee.

Appeals. The School's recommendation to terminate a particular student may be appealed by the student to the Dean, and is also subject to appeal to the Dean of the Graduate Division.

Other Relevant Information. Practicum requirements: First year: concurrent placement for 25 weeks at 2 to 2½ days per week. Second year: concurrent placement for 25 weeks at 3 days per week.

Doctor of Social Welfare Degree

Admission Requirements. In addition to the University minimum requirements, the School of Social Welfare requires completion of an M.S.W. degree program with a superior record from an accredited school of social work. At the discretion of the Doctoral Committee of the School and with the permission of the Dean, this requirement may be waived if an applicant possesses a postgraduate degree and related professional experience in a related field. Such candidates, however, may be required to fulfill specified requirements in the M.S.W. program of the school as determined by the Doctoral Program Committee. These requirements are in addition to the normal doctoral requirements.

Criteria that will be taken into consideration in admitting students include their quality of performance in previous undergraduate and graduate study, their capacity for doctoral level scholarship, ability to express themselves clearly in writing, success in professional employment and other pertinent experience, results of the Graduate Record Examination, and personal qualifications indicating suitability for advanced study and research.

An official copy of the score from the Aptitude Test of the Graduate Record Examination is required, as are official transcripts of record from every school attended since high school. The Graduate Record Examination is given several times a year in various locations in the United States and foreign countries. Applications and information about the Graduate Record Examination may be secured either from Graduate Admissions Office of UCLA or a geographically convenient school, or from the Educational Testing Service. The Southern California Regional Office of the Educational Testing Service is located at: 2200 Merton Avenue, Los Angeles, CA 90041. In addition, foreign students whose native language is other than English and whose higher education was not obtained in an English-speaking country are required to take Test of English as a Foreign Language (TOEFL). The School may request a student to take specified additional examinations to assist in the assessment of candidacy for admission.

Five letters of recommendation are required. Also required is a typewritten statement of professional and educational objectives. To exemplify their communication skills, applicants may submit any of the following: Published articles, master's thesis, unpublished papers, or term papers written in graduate courses.

Each applicant will be evaluated by a group of faculty from the Doctoral Program Committee; assigned by the chair of the Committee.

Although a personal interview is not normally required as part of the application procedure, whenever possible a conference is arranged between the applicant and a member of the doctoral faculty.

Prospective students must apply separately to the School of Social Welfare and to the Graduate Division of the University of California, Los Angeles. Both applications and the School brochure are obtainable upon written request to the UCLA School of Social Welfare Doctoral Program, 200 Dodd Hall, 405 Hilgard Avenue, Los Angeles, California 90024.

Advising. Graduate Adviser: Professor Jeanne Giovannoni, Chair of the Doctoral Program Committee, School of Social Welfare, 200 Dodd Hall, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024.

Following admission, each student is assigned an individual adviser. Appropriate assignment of adviser, as far as possible in accord with the interests and background of the student, is made by the Chair in consultation with the Doctoral Program Committee. Students are sent written notification of their adviser during the summer preceding entry into the program. The student will ordinarily continue with the initial adviser until successful completion of the Written Qualifying Examinations. The student may request a change in adviser at any time during the course of study, submitting this request to the Doctoral Program Committee chair either through the current adviser or directly. However, once the Graduate Division has officially appointed the dissertation chair, consent and approval of the Graduate Division is necessary for any change in committee structure.

For each quarter, a written statement of School of Social Welfare grades is provided to the student. In addition, a written report to the student and/or to the student record may be made by the adviser or instructors as necessary. Overall student progress is reviewed regularly by the Doctoral Program Committee.

The adviser and student establish a schedule of meetings; this includes a conference at the beginning of each quarter regarding the student's program of courses. The adviser's written approval is prerequisite to enrollment in all courses. Advisers and students are expected to meet regularly to review student progress

and plan an individualized program in relation to the student's needs. The student's dissertation committee may be formed after successful passage of the Written Qualifying Examinations, with the consent of the faculty member assuming the chair of the committee and the other members. Once formed, this committee assumes the role of guidance committee for the student's continued progress, and the chair of this committee acts as the student's adviser.

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 2-year span of study. All first-year course requirements must be completed before taking the Qualifying Examinations.

Required courses for the first year are: three consecutive quarters of research methods seminar (286ABC); a quarter devoted to a review of the psychological and social theories on which further work in practice theory is based, and two quarters of practice theory seminar (245ABC); two quarters in social welfare systems and social welfare policy (225AB). In addition, one quarter may be required in an area to be chosen by the Doctoral Program Committee, depending on the educational needs and interests of the first-year class.

Required courses for the second year are: two quarters of integrative seminars (210AB). A third quarter course is also required which may be a seminar or individual or small group tutorials, as determined by the Doctoral Program Committee.

In addition to these requirements, the student must take a minimum of three quarters in a graduate school or department outside the School of Social Welfare in an area related to the student's professional objectives. These courses are to be approved by the student's adviser. In exceptional instances, a student may obtain either a waiver of or substitution for a required course. A student who feels that such action is justified should make a request to the Doctoral Program Committee through his/her adviser. The Doctoral Program Committee will make the final decision, based upon the recommendations of the professor giving the required course. Ordinarily, students in full-time study will be expected to enroll in at least 12 units of study each quarter during the first two years and at least 8 units per quarter thereafter.

Written and Oral Qualifying Examinations. Before the formation of a doctoral committee, each student in the doctoral program must pass Written Qualifying Examinations — an 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 the student's ability to integrate the knowledge he/she has 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. Full-time students are expected to take the Written Qualifying Examinations before commencing the second year of doctoral program study.

The Written Qualifying Examinations are graded on a pass/fail basis, with the following scale: pass; fail with permission to retake the examination(s); fail without permission to retake the examination(s). Each examination will be read by several readers who will reach agreement on the grade given. In cases where it is recommended that the student not be permitted to repeat the examination(s), the Doctoral Program Committee will make the final judgment. In case of failure with permission to retake one or two of the three examinations, the student is required to retake only the examination(s) which was failed. Students will ordinarily be required to take the Written Qualifying Examinations in June of the first year of study; any retaking of examinations will ordinarily take place in September.

The Oral Qualifying Examination for advancement to candidacy covers the student's dissertation proposal and related areas. This examination is administered by the students' doctoral dissertation committee, which must have been formally approved by the Graduate Division prior to the examination date. The Written Qualifying Examinations must be successfully completed prior to the oral examination.

Doctoral Committee. Following the successful completion of the Written Qualifying Examinations, when the student has obtained a faculty adviser to chair the dissertation committee, notification will be given to the chair of the Doctoral Program Committee. The dissertation adviser will chair the student's doctoral committee overseeing the progress of the dissertation. The dissertation committee is composed of a minimum of five faculty members, of whom three must be from the School of Social Welfare and two from other schools or departments of the University, in accordance with Graduate Division regulations.

Final Oral Examination Following Completion of the Dissertation. A Final Oral Examination is not required of all candidates, but may be required at the option of the student's doctoral committee.

Time to Degree. A full-time doctoral student will usually complete all required coursework by the end of the sixth quarter (second year) after admission into the doctoral program. (In general, students admitted to the doctoral program will have completed a 2-year graduate program in an accredited school of social work conferring an M.S.W. degree.) At the end of the first year of doctoral study, having completed all first-year required courses, the Written Qualifying Examinations are given. The Oral Qualifying Examination is administered at a time appropriate to the student's progress in relation to his/her dissertation proposal, ordinarily no later than the seventh quarter of study, but varying according to the student's individual situation. It is generally expected that three quarters beyond completion of all required courses will be required for completion of the dissertation. This includes passage of a Final Oral Examination, if such is required by the student's doctoral committee. The period from doctoral admission to award of the degree is generally expected to be nine quarters (three years), although it may range up to five years in occasional instances.

Extension of time beyond the 5-year maximum is possible only by special permission of the Doctoral Program Committee. Students are generally expected to attend the program on a full-time basis. Only in exceptional instances may a student be admitted for a part-time program. This program is developed on an individual basis between the student and adviser, but would generally require at least one year of study in addition to the normal 3-year program for award of the D.S.W. degree.

Disqualification. All students are expected to maintain a level of performance consistent with the standards and procedures of the Graduate Division of the University. In addition, as a professional school, the School of Social Welfare reserves the right to terminate students at any point in their program who fail to demonstrate those attitudes and behaviors consistent with the personal and ethical standards essential to the responsible practice of social work (even though the academic work performed by such students may be satisfactory). Such action shall only be taken by the Dean on recommendation of a committee composed of at least three members of the faculty. The student involved in such review shall be permitted to appear before this committee.

Appeals. The School's recommendation to terminate a particular student may be appealed by the student to the Dean, and is also subject to appeal to the Dean of the Graduate Division.

Written Qualifying Examination. In case of failure of the Written Qualifying Examinations in one or more of the three core areas, the examination readers will make a recommendation to the School's Doctoral Program Committee as to whether or not the student will be permitted to retake the examination(s). The Doctoral Program Committee will make the final recommendation to the Dean based upon the student's total educational performance.

Insufficient Progress Toward the Degree. In cases where the student is not maintaining required progress toward the degree or has not

completed the Doctoral Program, including the dissertation, within five years of entry into the Program, the student is subject to the Doctoral Program Committee's recommendation to the Dean for termination of graduate study. Continuance in the Doctoral Program beyond five years is permitted only in exceptional instances, by petition to the School's Doctoral Program Committee.

Other Relevant Information. A practicum may be required as a component of one or more courses, although it is not a general program requirement. With the permission of the adviser and course instructor, a doctoral student may also make arrangements to enroll in courses in the M.S.W. program.

Graduate Courses

201A-201B-201C. Dynamics of Human Behavior I, II, III. (½ course each) Lecture, two hours; laboratory, one hour. Credit to be given at the completion of the sequence 201A-201B; 201C will be graded separately. Biopsychosocial factors associated with individual and group behavior and development as applicable in the social functioning of individuals and groups. Emphasis is on theoretical issues and research evidence which contribute to a unified theory of human development.

202A-202B. Dynamics of Human Behavior: Deviance IV, V. (½ course each) Prerequisites: courses 201A-201B-201C. Credit to be given only at the completion of the sequence. This course deals with 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. (½ course) An integrative course which brings together the preceding courses in the human behavior and the 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. (½ course) 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. (½ course) 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 of leadership and morale problems. Application to family, peer and special-purpose groups.

205. Group Conflict and Change. (½ course) 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. Prerequisite: Doctoral status and/or consent of instructor. Exploration of data and theories from the biological and policy sciences regarding ecological relationships. Review of current biophysical, sociocultural, demographic, technological, economic, and political changes as they affect human society, its institutions and, more particularly, social welfare needs.

220. History and Philosophy of Social Welfare. (½ course) 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. (½ course) 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. (½ course) Prerequisite: consent of instructor. Study of income-maintenance policy and services. Introduces theory and research about selected levels of living, regularity and source of income, and their relevance for family and social well-being; analysis of various income-maintenance policies and services; causes and nature of poverty. Current antipoverty legislation.

222A-222B-222C. Social Welfare Administration I, II, III. (½ course each) Prerequisite: 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 process involved in welfare administration; role of welfare agency personnel in policy formulation, implementation and evaluation.

223. Seminar on the Social Work Profession. (½ course) 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. History and Philosophy of Social Welfare. Prerequisite: Doctoral status 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 will be explored and values, assumptions, and attitudes historically affecting social welfare examined.

225A-225B-225C. Social Welfare Systems. Prerequisite: Doctoral status 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 will be stressed.

227A-227B-227C. Comparative Social Welfare Theories and Programs. Prerequisite: Doctoral status 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 Social Work Method I, II, III. (½ course each) Concurrent social work practicum is required. 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. Advanced Theory of Social Work Method IV, V. (½ course each) Required: Concurrent 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 Method (Community Organization) I, II, III. (½ course each) Concurrent practicum in social work required. Covers 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. Advanced Theory of Social Work Method (Community Organization) IV, V. (½ course each) Concurrent practicum in social work required. 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. (½ course) (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.

245A-245B-245C. Development of Social Work Practice Theory. Prerequisite: Doctoral status and/or consent of instructor. Critical analysis of social work practice theories in historical, social and scientific contexts, with attention to how theory becomes modified through application to practice.

258. Critical Problems in Social Welfare. Prerequisite: Doctoral status and/or consent of instructor. Concerned with current problems in the field of social welfare. Specific topics to be discussed will vary depending upon 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.) This course reviews various theoretical perspectives applicable to the analysis of family structure and dynamics. Critical issues in the application of family constructs to clinical problems will receive particular attention. Mr. Cohen, Mr. Goldstein

280. Social Welfare Research. (½ course) 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. (½ course each) Credit to be given only at the completion of the sequence. 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. This course is offered on an In-Progress basis, which requires students to complete the full three-quarters sequence, at the end of which time a grade is given for all quarters of work.

285A-285B-285C. Research in Social Welfare. Prerequisite: Doctoral status 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 will include survey, panel, experimental observation, and theory development research.

286A-286B-286C. Survey of Research Methods. Prerequisite: Doctoral status and/or consent of instructor. Purpose to present 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. (½ course each) A series of seminars dealing with trends in social work and social welfare, with the focus on current social problems affecting individuals, groups, and communities and new patterns of intervention based on recent demonstrations and research.

Professional Courses

401A-401B-401C. Practicum in Social Work. Laboratory, twenty hours weekly. Educationally directed practicum conducted in selected health, welfare and educational facilities. The major objective is to provide opportunities for the student to test his theoretical knowledge and to acquire a disciplined practice foundation in his profession.

402A-402B-402C. Advanced Practicum in Social Work. (1½ courses each) Prerequisites: course 401A-401B-401C. Laboratory, 24 hours weekly. Practicum in social work is arranged for the student in keeping with his major field of study.

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Adviser and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596A. Special Study and Research for M.S.W. Degree Candidates. (½ to 2 courses) Individual programming for selected students to permit pursuit of a subject in greater depth.

596B. Special Study and Research for D.S.W. Degree Candidates. (½ to 2 courses) Prerequisite: Doctoral status and/or consent of instructor. S/U and letter grade.

597A. Preparation for the Comprehensive Examination for the M.S.W. Degree. (½ to 2 courses) Prerequisite: consent of instructor.

597B. Preparation for the Qualifying Examination for the D.S.W. Degree. (½ to 2 courses) Prerequisite: Doctoral status and/or consent of instructor.

599. Dissertation Research in Social Welfare for D.S.W. Degree Candidates. (½ to 2 courses) Prerequisite: Doctoral status and/or consent of instructor.

Sociology

(Office, 264 Haines Hall)

Jeffrey Alexander, Ph.D., *Professor of Sociology.*
Rodolfo Alvarez, Ph.D., *Professor of Sociology.*
Phillip Bonacich, Ph.D., *Professor of Sociology.*
Howard E. Freeman, Ph.D., *Professor of Sociology.*
Harold Garfinkel, Ph.D., *Professor of Sociology.*
Oscar Grusky, Ph.D., *Professor of Sociology.*
Gene N. Levine, Ph.D., *Professor of Sociology.*
Ivan H. Light, Ph.D., *Professor of Sociology.*
Valerie K. Oppenheimer, Ph.D., *Professor of Sociology.*
Georges Sabagh, Ph.D., *Professor of Sociology.*
Melvin Seeman, Ph.D., *Professor of Sociology.*
Emanuel A. Schegloff, Ph.D., *Professor of Sociology, Chair of the Department.*
Warren D. TenHouten, Ph.D., *Professor of Sociology.*
Donald J. Treiman, Ph.D., Professor of Sociology.
Ralph H. Turner, Ph.D., *Professor of Sociology.*
Maurice Zeitlin, Ph.D., *Professor of Sociology.*
Leo J. Kuper, Ph.D., *Emeritus Professor of Sociology.*
Kenneth D. Bailey, Ph.D., *Associate Professor of Sociology.*
Robert M. Emerson, Ph.D., *Associate Professor of Sociology.*
Lucie C. Hirata, Ph.D., *Associate Professor of Sociology.*
John E. Horton, Ph.D., *Associate Professor of Sociology.*
David E. Lopez, Ph.D., *Associate Professor of Sociology.*
David D. McFarland, Ph.D., *Associate Professor of Sociology.*
Melvin Pollner, Ph.D., *Associate Professor of Sociology.*
Jerome Rabow, Ph.D., *Associate Professor of Sociology.*
Samuel Surace, Ph.D., *Associate Professor of Sociology.*
Roderick J. Harrison, Ph.D., *Assistant Professor of Sociology.*
Jack Katz, Ph.D., *Assistant Professor of Sociology.*
Clarence Lo, Ph.D., *Assistant Professor of Sociology.*
Linda B. Nilson, Ph.D., *Assistant Professor of Sociology.*
Melvin Oliver, Ph.D., *Assistant Professor of Sociology.*
Jeffrey Prager, Ph.D., *Assistant Professor of Sociology.*
William G. Roy, Ph.D., *Assistant Professor of Sociology.*
Lynne G. Zucker, Ph.D., *Assistant Professor of Sociology.*

•

Ralph L. Beals, Ph.D., *Emeritus Professor of Anthropology and Sociology.*
Judith Blake, Ph.D., *Professor of Public Health and Sociology.*
Burton R. Clark, Ph.D., *Professor of Education and Sociology.*
Michael S. Goldstein, Ph.D., *Associate Professor of Public Health and Sociology.*
C. Wayne Gordon, Ph.D., *Professor of Education and Sociology.*
Harry H. L. Kitano, Ph.D., *Professor of Social Welfare and Sociology.*
Edwin S. Shneidman, Ph.D., *Professor of Thanatology, Medical Psychology, Psychology, and Sociology.*
Gerald H. Shure, Ph.D., Professor of Psychology and *Sociology.*
Julia C. Wrigley, Ph.D., *Assistant Professor of Education and Sociology.*

•

David O'Shea, Ph.D., *Associate Professor of Education and Sociology.*

M.A. and Ph.D. Degrees

The graduate program of the Department of Sociology 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 will ordinarily only accept 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 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 non-university research centers.

Admission Requirements. In addition to the minimum University requirements (an acceptable bachelor's degree, and a "B" average in all upper division and graduate level work), the Sociology Department requires (1) three letters of recommendation, preferably from professors of sociology who are familiar with the applicant's written work and research experiences; (2) transcripts from all colleges where the applicant had studied (the Department's evaluation considers not only the record in sociology, but all undergraduate work, including coursework in English composition, logic, linguistics, and mathematics); (3) a statement of purpose, not to exceed three typewritten double-spaced pages 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 written by the applicant; (5) an official statement of scores on the Graduate Record Examination; and (6) for applicants whose native tongue is not English, the Test of English as a Foreign Language (TOEFL) is required.

Although background preparation in sociology is highly desirable, it is not mandatory for admission to the Department. Applicants need not be uniformly high on all indicators of potential. The Admissions Committee, which generally consists of five faculty members and two advisory graduate student members, uses a number of indicators of particular skills rather than relying heavily on just one or two. For example, in assessing the level of verbal skills, the Committee considers several items, including samples of written work and grades in courses that ordinarily require extensive verbal skills, as well as verbal Graduate Record Examination scores.

In addition to relatively formal criteria (such as analytic proficiency and articulateness), the Department pays particular attention to applicants who seem likely to contribute considerable intellectual, social, or cultural diversity to its student body. Women and minorities are therefore encouraged to apply. The deadline for receipt of applications is December 31. Application forms and more detailed information are available upon request from: The Graduate Affairs Assistant, Department of Sociology, UCLA, Los Angeles, CA 90024.

Entering graduate students are assigned a faculty member as an entrance adviser. At any time, the student may change from this adviser to any other consenting faculty member.

During the first year of graduate study, the student is expected to form a 2-person Dossier Committee to supervise written work in the Department. (Please note that the entrance adviser does not automatically become a member of the Dossier Committee.) The Dossier Committee must be formed by the first quarter of the student's second year of study, and when constituted, will assume all advising responsibilities for that student.

Faculty advisers, whether Entrance Adviser or Dossier Committee member, will meet with the student at the beginning of each quarter in order to plan the student's coursework for that quarter, sign study list cards, and discuss questions about professional training. In addition, the student will meet with the members of his/her Dossier Committee no later than the fifth quarter of graduate work to discuss current progress on the dossier papers, and to plan the student's future program of courses.

Major Fields or Subdisciplines. The Department of Sociology is large and diverse, and its faculty conducts research and teaching in a large number of the fields into which sociological work is commonly categorized. Like most social sciences, as Sociology has developed, it has become increasingly differentiated with regard to subfields. Specialties are often not clearly bounded social groups, and as a result it becomes more and more difficult to group scholars within a small number of interest areas. Granting this limitation, it would appear that 11 fields are now prominent or are becoming particularly prominent in the Department at this time: Comparative and Historical (including the study of social change); Demography; Ethnomethodology (including the organization of language, thought and experience); Mathematical-Quantitative Sociology; Minorities; Organizations; Political (including Marxist) Sociology; Social Policy and Applied Sociology (including evaluation research); Social Psychology; Stratification; and Theory. The Department has developed strong concentrations in each of these areas, involving both instruction and research opportunities.

Clearly, the domains of concentration listed above are broad in their scope, and they do not detail the variety of specializations and subfields that are actively pursued within the Department. Thus, for example, within the general area of theory and methods, the student will find opportunities for training in experimental methods, survey research, theory construction, quantitative historical methods, and enthnographic research, among others. With respect to comparative analysis, the Department has specialists in a variety of area studies including Latin America, Europe, Asia, Africa and the Middle East, and for all of these areas there are interdisciplinary centers devoting special attention to problems relating to these areas. In the same way, research and training on American minorities (including women) are well-represented in both the institutions and the faculty on the campus. The student can also make ready use of resources that are formally affiliated with other departments and schools at UCLA — e.g., resources relating to demographic studies and medical sociology in the School of Public Health, and to the sociology of education. Thus, graduate students are not compelled to select one of the 11 fields listed above for specialization. They may wish to combine fields or to develop their own interests in one of the myriad of subfields in Sociology not specifically listed here.

Foreign Language Requirement

Master's Degree. There is no foreign language requirement for the master's degree.

Ph.D. Degree. 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 their graduate study. In any case, the foreign language requirement must be fulfilled before the doctoral committee is nominated and the oral examination is taken. A reading knowledge, as demonstrated either by acceptable performance on a standardized test or by completing Course 5 of a language, or the equivalent, with at least a grade of C, is required for the Ph.D. in sociology. The student may choose from French, German, Italian, Russian and Spanish. He/she may also petition the Department for approval of some other language that will be more useful in relation to his/her special interests in sociology.

With the approval of the Department, a foreign student may offer English as a foreign language if the native language is other than English. Proficiency in English will be evaluated by the level of performance on the UCLA entrance examination in English for foreign students, together with achievement in graduate work.

A second alternative is that students might find it equally profitable for their research to study sources in an allied field such as history, political science, linguistics, psychology, economics, philosophy, or mathematics. The student 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. In order to do this, the student must submit the proposed list of courses to the Executive Committee with a justification for the set of courses — presumably based on the potential contribution of these courses to the Ph.D. research. Only courses taken while the student is a graduate student will count toward fulfilling this requirement and once approved, any substitution of courses for those originally approved require full committee approval.

It should be stressed that the Department, via its Executive Committee, has adopted strict guidelines for such language substitution in the Ph.D. program as follows:

(1) Petitions for substitutions must include clear evidence that foreign language proficiency would *not* be useful to the student's research area or dissertation topic. If such evidence is not presented, it will be presumed that a suitable foreign language will be learned.

(2) Petitions for substitutions must indicate the relevance of the proposed coursework to the major research area or dissertation topic.

(3) Petitions must include detailed statements of the content of the courses, either in the form of a course outline or in a note written by the course instructor.

(4) Petitions for substitutions must outline coursework developing a proficiency qualitatively similar to a foreign language — courses which enhance the student's skills in an area not covered in departmental course offerings.

(5) While methods courses can be undergraduate offerings (e.g., matrix algebra; historiography), substantive courses should generally be graduate offerings. Exceptions will be granted only when sufficiently explained by a statement attached to the petition.

Course Requirements

Before the Dossier Review. Total number of required courses: nine (36 units).

(1) Sociology 210-B (a 2-quarter graduate level statistics course).

Ordinarily the statistics requirement will be met by taking Sociology 210A-B and receiving a grade of C or better. But occasionally, a student will have mastered the material in 210A-B elsewhere. If the student has such equivalent training, a petition for exemption from the coursework requirement should be filed with the Executive Committee (along with pertinent evidence and an adviser's recommendation) to be referred to the relevant faculty. The instructors of 210A-B may give such a student the opportunity to satisfy the requirement by examination, without enrolling in the courses. No course credit will be given for requirements met by examination.

(2) Sociology 21XA-B (a 2-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 211-218.

If the student has equivalent methodological training elsewhere, he/she should file a petition with the Executive Committee for exemption from the methodology requirement (along with pertinent evidence and an adviser's recommendation).

(3) *Three* other 200-level courses in Sociology in the series 219 and up (but including, as well, the options of Sociology 201AB, a proseminar in theoretical sociology, and 210C, an advanced mathematical statistics course which is available after the 210AB sequence). Neither Sociology 292A-B-C- nor Sociology 495 is eligible for inclusion in this group of three courses required as part of the dossier.

(4) *Two* other graduate (below 500 — i.e., not including independent studies) or upper division undergraduate courses in Sociology or in a cognate department.

[Students who arrive with a M.A. in Sociology from another university, see last paragraph under Dossier Review section.]

After the Dossier Review. Total number of required courses: two (8 units).

An additional methodology sequence (from the series 211-218) must be completed before the awarding of the Ph.D. degree.

Ordinarily, students also enroll in additional courses in preparation for the Field Examinations.

Dossier Review. Rather than a Comprehensive Examination, graduate students must submit an acceptable dossier of two written papers for approval by the general faculty. The papers must demonstrate the student's general competence in sociological theory, methodology, and selected substantive areas.

The student will select two faculty members for the Dossier Committee, subject to their con-

sent. He/she should attempt to select a committee whose members represent a broad range of professional interests. This may be done as early in the graduate career as is desired by the student. It may not be postponed beyond the beginning of the second year of residence in graduate work.

In consultation with and on the advice of this committee, the student shall assemble two papers demonstrating that the student (1) has 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 treat research and methodological issues. These papers may seek to meet the above aims separately or in any combination. There need not be a "theory paper" or a "methodology paper", but the papers should demonstrate theoretical and methodological competence. Papers may have been previously submitted to meet course requirements in this or any other department.

When the Dossier Committee feels these requirements have been met, they will nominate the student for Faculty Review by submitting the papers to the Graduate Curriculum and Advisement Committee (GCAC). That committee appoints a 2-person evaluation panel which reports its assessment to the GCAC as a whole. The GCAC considers the panels' reports as well as that of the Dossier Guidance Committee and presents an evaluation and recommendation to the full faculty. The GCAC may recommend any of the following options:

(1) The dossier is passed. The candidate is granted the M.A. and permitted to proceed to the Ph.D.

(2) The dossier is passed conditionally. The candidate is granted the M.A. and permitted to proceed to the Ph.D. upon completion of specified revisions of the dossier.

(3) The candidate is granted a terminal M.A.

(4) The dossier is not acceptable (the candidate may submit at a later time or be asked to withdraw).

The GCAC's recommendation and the analysis upon which it is based is to be made available to the student, the Dossier Committee and the faculty no later than one week prior to the Faculty Review. The faculty at its review may ratify the recommendation of the GCAC or alter it, including the option of making recommendation to the Dean of the Graduate Division to terminate graduate status.

A student is allowed two years from entrance into the Department to qualify under the Dossier System. This means that a student must be nominated for Faculty Review no later than the seventh quarter of residence. The nomination must be made regardless of the state of the dossier, except upon approved petition to postpone the submission of the dossier. A student may not be reviewed by the faculty before all of the requirements of the M.A. degree have been completed.

Any student entering for graduate studies at UCLA with a M.A. degree in Sociology from another institution will normally come up for a dossier review in the first quarter of residence at UCLA, and under no circumstances later than the third quarter of residence. In this dossier review, the Department will determine whether or not the student may proceed directly to preparation for the field examinations, whether additional courses need to be taken for breadth purposes, whether the submitted papers need additional work, or whether additional papers need to be done, and whether the statistics and methodology sequences have been adequately satisfied. Such a student should submit for the dossier review two papers, one of which can be a M.A. thesis written at another university, and a transcript from the university at which the M.A. degree was earned so that this Department can determine whether the requirements ordinarily constraining students in the first years of our program have been met.

Field Examinations and Oral Qualifying Examinations

Following successful completion of the dossier, the student should request the Department to appoint a Ph.D. guidance chair, who will normally be the principal adviser throughout the completion of all work. The guidance chair should be a faculty member who is qualified in the student's field of major interest, and qualified to supervise the student's projected dissertation. In consultation with the student, the guidance chair will recommend to the Department two other faculty members to serve with him/her as the student's guidance committee. The guidance committee will then assume the advisory function for the student, administer and evaluate Field Examinations and Qualifying and Final Oral Examinations, and constitute the departmental members of the doctoral committee when it is formed. In the event of a change in interests or the absence of a faculty member from the University or other cause, the student may request changes in the guidance committee.

After approval of the dossier, the student becomes eligible to take the Ph.D. Field Examinations. These Examinations are administered by the student's guidance committee and cover two fields of specialization chosen from within any of the major recognized areas in sociology which the student can justify to the satisfaction of the guidance committee. Under special circumstances, one of the fields may be in a related discipline other than sociology. The emphasis here is on mastery of a specialty and depth of understanding.

If the performance on the Field Examination is satisfactory, and the foreign language requirement has been fulfilled, the student may take the Oral Qualifying Examination. This examination may range over general sociology, the student's specific fields, and the student's dissertation plans. It is given by the doctoral committee not later than six months after the completion of the written examination. The student must prepare a 2-page abstract of the dissertation proposal for distribution to the entire faculty of the Sociology Department no later than one week before the oral examination.

In addition to the 2-page abstract, a full-length dissertation proposal shall be required at the time of the preliminary oral examination. A dissertation proposal approved by the committee must be filed with the Department reasonably soon after the preliminary orals. In the event of a major revision in the topic or methodology of the dissertation, a revised prospectus approved by the committee is required, and will be filed in the same manner as the original prospectus. Minor changes in the methodology and hypotheses which normally takes place as a student carries out the dissertation research do not call for a revised prospectus.

Students who successfully complete both Written and Oral Qualifying Examinations will be sent an Application for Candidacy from the Registrar's Office. This must be signed by the chair of their committee. The student must pay a candidacy fee to the Cashier. The form must then be returned to Graduate Division.

500 Series Course Limitations. Courses in the 500 series (596, 597, 599) are normally taken in preparation for the Dossier Review, the Field Examinations, and for dissertation research.

While these courses may be taken to maintain enrollment, they do not count toward the course requirements.

Final Oral Examination Following Completion of the Dissertation (For the Ph.D. degree). The optional Final Oral Examination for the Ph.D. degree is given by the doctoral committee not later than six months after the completion of the dissertation. The Final Oral Examination will not be scheduled until sufficient time has been allowed for all committee members to read the dissertation critically, and until both committee members and the student agree that the dissertation is in final and defensible form. The judgment at this time does not preclude a subsequent decision that the dissertation requires revision or is unacceptable on the basis of the findings of the oral examination. The examination centers around the dissertation, the field in which it is written, and the relation of this field to the discipline of sociology as a whole.

A decision to waive the final examination is optional on the part of the student's Ph.D. committee and must be consistent with the policies of the Graduate Council.

Time to Degree.

(a) From graduate admission to completion of the Dossier Review (i.e., the master's degree stage): seven quarters.

(b) From completion of dossier to Field Examinations: four quarters.

(c) From Field Examination to first Oral Examination: two quarters.

(d) The dissertation and Final Oral Examination (if required) should be completed during the fifth and sixth years of graduate study.

(e) Normative time-to-degree for the Ph.D.: 18 quarters.

Candidate in Philosophy Degree. Candidates for this degree must conform to the general requirements set by the Graduate Division for the C.Phil. degree. It should be emphasized that the granting of the C.Phil. degree does not depend alone upon the satisfactory completion of a specified number of courses. The candidate must demonstrate competence as a research scholar and ability to give instruction in his/her field.

In addition to the general requirements set by the Graduate Division, every prospective candidate for the C.Phil. degree must have completed all of the above listed departmental requirements for the Ph.D. degree other than the filing of the dissertation and the final (optional) oral examination.

Two steps will insure that the C.Phil. is not a terminal degree:

(A) Not less than one week prior to the oral examination, all students are required to distribute a 2-page abstract of the dissertation to the entire faculty of the Department for their information and comment.

(B) Reasonably soon after the oral examination, and before the Department certifies approval of the C.Phil. degree, the student must file a final version of the dissertation prospectus, which is acceptable to the doctoral committee.

The departmental time limit between advancement to candidacy and award of the Ph.D. degree is seven years, during which time students who hold the C.Phil. will automatically be readmitted to graduate standing if they withdraw during the interval.

Disqualification and Appeal of Disqualification. If a student is to be disqualified (terminated) from the graduate program for reasons other than failure to maintain a grade point average greater than 3.0, the decision regarding such a termination is generally made, at the departmental level, by the full faculty at its quarterly dossier review meeting. A recommendation for termination may be forwarded to that meeting by the Graduate Curriculum and Advisement Committee, which serves as the review body making recommendations to the full faculty concerning disposition of candidacies for completion of dossiers and awarding of M.A. degrees. The elected Executive Committee of the Department is the established mechanism by which a student may appeal for a review of the disposition of his/her case; and the Executive Committee may make a recommendation for reconsideration to the Department where it deems such reconsideration warranted. The Departmental By-Laws provide for an alternative method of appeal to full faculty review of Executive Committee action, by way of the regulation (By-Laws, Item #10) that two voting faculty members are empowered jointly to request a faculty meeting on any action within the Department.

Specific conditions that may lead to termination include (1) submission of graduate work which is, in the judgment of the Graduate Curriculum and Advisement Committee and/or the full faculty dossier review, unsatisfactory for either the granting of the M.A. degree or further pursuit of the doctorate; (2) making unsatisfactory progress toward the completion of the student's dossier and/or doctoral work (e.g., requiring repeated extensions of time for completion of program requirements; receiving numerous "Incomplete" grades, and/or failure to remove such "Incompletes"); (3) repeated failure to pass any of the several required steps in doctoral studies (e.g., specialty field examinations, language requirements or their substitutes, oral examination); or (4) failure to complete doctoral work within the required time limit (within seven years after advancement to candidacy).

Other Relevant Information. The Department of Sociology is situated on the second floor of Haines Hall and is located close to the other social sciences and the Institute for American Cultures. Other facilities of interest to Sociology graduate students are the Graduate Research Library, the Survey Research Center, which is a division of the Institute for Social Science Research (ISSR), the small group laboratories of the Graduate School of Management, and the Center for Computer-Based Behavioral Studies. The Department has its own on-line data processing equipment and an APL terminal as well as access to the data processing facilities of the Campus Computing Network of the University. The Department also has the resource of its own audiovisual laboratory and statistical facilities.

Graduate Courses

201A-201B. Proseminar in Sociology. Prerequisite: Graduate Standing. A comprehensive survey of basic concepts and theories in the major fields of sociology. Designed primarily for graduate students in the first year of residence. Mr. Alexander, Mr. Lopez

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 that can include: use of computers; loglinear models; factor analysis, discriminant function analysis; scaling and measurement; sampling design; nonparametric techniques and measures; matrix algebra if used in coverage of listed topics. The course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for each quarter. Mr. Bonacich, Mr. McFarland, Mr. TenHouten

210C. Intermediate Quantitative Methods III. Prerequisite: course 210B. Not required for the M.A. or Ph.D. degrees in sociology. This course will cover additional and more advanced multivariate techniques of particular value to sociologists.
Mr. Bonacich

211A-211B. Comparative and Historical Methods. The course is offered on an In-Progress grading basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for each quarter.
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.
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 will be discussed. 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 researches.
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 and 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. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Mr. TenHouten

215A-215B. Experimental Sociology. Prerequisites: course 210A or equivalent and consent of instructor. A course designed to provide students with the basic fundamentals of the experimental method, particularly as it is used in social psychology. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work.
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. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work.
Mr. Levine, Mr. Treiman

217A-217B. Ethnographic Field Work. Prerequisite: consent of instructor. Theories and techniques of ethnographic field work. This course will consider the kinds of problems amenable to ethnographic approaches, methods and techniques for doing fieldwork, and ethnical problems involved in such research. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work.
Mr. Emerson, 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. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Mr. Garfinkel

219. Theory of Sociological Inquiry. Prerequisites: course 210A and consent of instructor. A general review of procedures followed by social scientists in attempts to achieve valid theoretical knowledge. Focuses on inductive inference and theory testing: control and randomization, experimental and nonexperimental research designs, association and causality, models, measurement theory, sampling theory. Mr. TenHouten

220. Role Theory. Prerequisites: Graduate Standing and 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: Graduate Standing and course 18 or equivalent, course 126 or equivalent, or consent of instructor. An examination of the various approaches to both micro and macro ecology, 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

224A-224B. Problems in Social Psychology. Prerequisites: course 210A and consent of instructor. The basic course for graduate students intending to specialize in social psychology. The first quarter examines systematically major theoretical contributions to the field. The second quarter introduces the student to current work being done in the Department in several subfields.

225A-225B. Demographic Perspectives on the Relationship of Family and Economic Systems. Prerequisite: course 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 is: (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. The first quarter will be primarily devoted to lectures and readings. The second quarter carries students into individual research projects involving a term paper and classroom reports of results.
Ms. Oppenheimer

226. Leadership and Comparative Social Structure. A comparative analysis of leadership in different social structures with particular attention to the development, maintenance, and disintegration of leadership corps and cadres. Mr. Surace

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

229. Processes of Social Control. Prerequisites: 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 given 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. Will explore 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

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 will be paid to competing perspectives on power, the theory of the state, and the relationship of class structure to politics.
Mr. Roy, Mr. Lo, Mr. Prager

234. Sociology of Community Organization. Prerequisites: Graduate Standing and 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.

235. Social Structure and Social Movements. Prerequisite: Graduate Standing or consent of instructor. A survey of some social science theories bearing on the analysis of large-scale social movements and upheavals. The causes, course and consequences of selected social movements, insurrections and revolutions will be examined. Mr. Surace

236. Social Change in the Middle East. An analysis of the sources, extent, and types of social change in the Middle East with an 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. Field Work in Minority Communities. Prerequisites: Graduate Standing and consent of instructor. This two-quarter sequence is designed to supply graduate students with the theoretical and methodological equipment necessary for studying disadvantaged minority communities. Special emphasis is given to the Black ghetto and the barrio. Nonstandard language forms (mainly Black English and Chicano) are especially focused upon instrumentally. In the field students will gather empirical data that sheds light on the ways in which data of greater validity and practical utility might be collected among these groups. This course is offered on an In-Progress basis, which requires students to complete the full two-quarter sequence, at the end of which time a grade is given for all quarters of work. Mr. Levine

240. Mathematics of Population. Prerequisites: introductions to 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

247. Neurosociology. Prerequisites: Graduate Standing and 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. (Same as Public Health M283F.) Prerequisites: Public Health 182, three courses in psychology, sociology, or anthropology, or equivalent, and consent of instructor. Sociological examination of the concepts "health" and "illness" and role of various health professionals especially physicians. Attention given 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. (Same as Public Health M283G.) Prerequisites: Public Health 182, three courses in psychology, sociology, or anthropology, or equivalent, and consent of instructor. Sociocultural factors affecting differential patterns of health behavior, illness behavior, and sick role behavior.

Seminars

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

M254A. Sociology of Law. (Same as Law M354.) Prerequisite: consent of instructor. Social control functions of law and legal institutions with particular attention to the contrast between law-ways of stateless and tribal societies and contemporary American legal processes and institutions, primarily those of criminal law. Mr. Prager

254B. Sociology of Law. Social control functions of law and legal institutions with particular attention to the contrast between law-ways of stateless and tribal societies and contemporary American legal processes and institutions, primarily those of criminal law. Mr. Emerson, Mr. Prager

255A-255B. Selected Issues in Sociological Theory. Seminar. Prerequisite: consent of instructor. Examination of selected issues and problems in classical or contemporary sociological theory and in the history of the development of sociological theory. Course 255A is not ordinarily prerequisite to 255B.

256. Demography. Mr. Bailey, Mr. Sabagh

257. Sociology of the Arts. Mr. Horton

258. Sociology of Religion.

259. Social Structure and Economic Change: Historical and Comparative Perspectives.
Ms. Hirata, Mr. Surace, Mr. Zeitlin

260. Industry and Society.
Mr. Light, Mr. Surace

261. Ethnic Minorities. Mr. Levine, Mr. Seeman

M262. Selected Problems in Urban Sociology. (Same as Afro-American Studies M200C.) Prerequisite: consent of instructor.
Mr. Harrison, Mr. Light, Mr. Oliver

263. Social Stratification. Mr. Treiman

264. Professions in the American Society.
Ms. Nilson, Ms. Oppenheimer

265. Problems in Organization Theory.
Mr. Grusky, Ms. Zucker

266. Selected Problems in the Analysis of Conversation. Prerequisite: course 144A or consent of instructor. Mr. Schegloff

267. Selected Problems in Communication.
Mr. Pollner, Mr. Schegloff

268. Historical and Interpretive Sociology.
Mr. Surace

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 and 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.

275. Seminar in Comparative Social Structure: Developed Societies. The comparison of social structures among developed societies, including the comparative analysis of the main institutional features, social class arrangements, social mobility characteristics, and the like. Comparisons will involve the U.S. and developed countries in Western Europe, Asia and Oceania. Mr. Treiman

276. Selected Topics in the Sociology of East Asia. Prerequisites: Graduate Standing and consent of instructor. The seminar will analyze 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. Hirata

277. Sociology of Science. Mr. TenHouten

279. Sociology of the Theatre. Seminar on different movements in the theatre, or expressions of the Theater (e.g., Theatre of the Absurd, Contemporary Experimental Theatre), with emphasis on the theatrical performance as it relates to the environing society, responds to, or reacts against, theatrical conventions, socializes the players to the performance, and creates its own social world. Mr. Horton

280. Seminar in Evaluation Research. Prerequisite: Graduate Standing. The seminar covers both the technical and political aspects of implementing evaluation research studies. The role of evaluation research in social policy development is considered as well as procedures for undertaking process and impact evaluations. Graded S/U and letter grade. Mr. Freeman

281. Selected Problems in Mathematical Sociology. Prerequisite: Mathematics 4B or 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 and Graduate Standing. Mr. Emerson, Mr. Grusky, Mr. Pollner

M287A-M287B. Population Policy and Fertility. (Same as Public Health M274A-274B.) Prerequisites: Public Health 102, 112, 173 or equivalent, Graduate Standing, and consent of instructor. Public Health M274A is prerequisite for M274B. Sociology M287A is prerequisite for 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.) Prerequisites: Public Health M274A-M274B or equivalent, Graduate Standing, and 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

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 solidary types with special reference to utopian communities and developmental processes. Mr. Light

292A-292B-292C. Research Development.

495A-495B. Supervised Teaching of Sociology. (½ course each) Prerequisite: teaching assistant status in the Department of Sociology, or equivalent. A special course for teaching assistants. It is designed to deal with the problems and techniques of teaching introductory sociology. To be graded S/U.

Individual Study and Research

501. Cooperative Program. (½ to 2 courses) Prerequisites: approval of UCLA Graduate Advisor and Graduate Dean. Approval of host campus Instructor, Department Chair and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

596. Directed Research and Study in Sociology. (½ to 2 courses)

597. Individual Study for Examinations. Preparation for the dossier for the master's degree or the qualifying examination for the Ph.D.

599. Research in Sociology for Ph.D. Degree Candidates. (1 to 2 courses)

Spanish and Portuguese

(Office, 5303 Rolfe Hall)

Shirley L. Arora, Ph.D., *Professor of Spanish (Chair of the Department).*
José R. Barcia, Lic. F. y L., *Professor of Spanish.*
Rubén A. Benítez, Ph.D., *Professor of Spanish.*
Joaquín Gimeno, Ph.D., *Professor of Spanish.*
Claude L. Hulet, Ph.D., *Professor of Spanish and Portuguese.*
Carroll B. Johnson, Ph.D., *Professor of Spanish.*
Gerardo Luzuriaga, Ph.D., *Professor of Spanish.*
C.B. Morris, D.Litt., *Professor of Spanish.*
C.P. Otero, Ph.D., *Professor of Spanish and Romance Linguistics.*
José Miguel Oviedo, Ph.D., *Professor of Spanish.*
Stanley L. Robe, Ph.D., *Professor of Spanish.*
John A. Crow, Ph.D., *Emeritus Professor of Spanish.*
John E. Englekirk, Ph.D., *Emeritus Professor of Spanish.*
Aníbal Sánchez-Reulet, Ph.D., *Emeritus Professor of Spanish.*
Marion A. Zeitlin, Ph.D., *Emeritus Professor of Spanish.*
E. Mayone Dias, Ph.D., *Associate Professor of Portuguese.*
A. Carlos Quícoli, Ph.D., *Associate Professor of Portuguese and Romance Linguistics.*
Richard M. Reeve, Ph.D., *Associate Professor of Spanish.*
Enrique Rodríguez-Cepeda, Ph.D., *Associate Professor of Spanish.*
A. John Skirius, Ph.D., *Associate Professor of Spanish.*
Paul C. Smith, Ph.D., *Associate Professor of Spanish.*
Susan Plann, Ph.D., *Assistant Professor of Spanish.*
Guillermo Hernández, C.Phil., *Acting Assistant Professor of Spanish.*

•

José M. Cruz-Salvadores, M.A., *Lecturer in Spanish.*
George L. Voyt, J.D., *Lecturer in Spanish.*

Master of Arts in Spanish

Admission Requirements. The UCLA B.A. in Spanish or its equivalent is required. Students admitted from elsewhere whose preparation is considered deficient are required to make up their deficiencies by taking a specified number of relevant upper division courses in the Department. These courses may be taken concurrently with graduate courses, but they do not count toward the M.A. Three letters of recommendation are also required. These should be preferably from professors with whom the applicant has studied in the major field, who can comment on his/her potential as a graduate student. In addition, the Graduate Record Examination Aptitude Tests are required. A combined score of 1000 is preferred, although more weight is given to the Verbal than to the Quantitative aspects. The Graduate Advisers meet as a committee and make a final decision in each case.

Advising. All students working toward the M.A. are advised by graduate advisers who represent the three fields of specialization open to M.A. candidates, viz: Spanish Literature, Spanish-American Literature, Linguistics. Each new graduate student must make an appointment through the Department Graduate Counselor with the adviser who represents his/her major field of interest. Appointments are scheduled during the week preceding the start of classes in the Fall, Winter and Spring Quarters. During the interview, the student and his/her adviser discuss general requirements and decide on a program of courses for the quarter. After this initial interview, the student is required to see his/her adviser at the beginning of each quarter for a review of his/her progress toward the degree.

The adviser also approves the student's study list at this time, if the student is making satisfactory progress. At present, the Graduate Advisers are Professor C.L. Hulet (Luso-Brazilian language and literatures), C.B. Johnson (Spanish literature), G. Luzuriaga (Spanish American Literature), C.P. Otero (Linguistics), José Miguel Oviedo (Spanish American literature), S.L. Robe (Linguistics), P.C. Smith (Spanish literature). Inquiries should be addressed to: Ms. Joanne March, Graduate Counselor, Department of Spanish and Portuguese, 5325 Rolfe Hall, Tel: 825-7091.

Foreign Language Requirement. One language besides Spanish is required. Any language which has a written literature is acceptable. For languages in which an Educational Testing Service (ETS) test exists, passing the appropriate test fulfills the requirement. In languages for which there is no such test, passing an examination administered by the relevant language department fulfills the requirement. It may also be fulfilled by evidence of completion of five quarters of college level courses in the language with grade B or above. If the student offers Portuguese, one year of study (Portuguese 3) at UCLA is sufficient. The language requirement must be met not later than the same quarter in which the final course requirement is completed.

Course Requirements. Attention is directed to the statement concerning deficiencies in the section on *Admission Requirements.* In addition to any deficiencies noted, course requirements for the M.A. (Comprehensive Examination Plan) are as follows: 10 courses with a minimum of seven in the 200 series, of which one must be a seminar (250-299) which may be taken only after the relevant graduate preseminar (200-249). For example, course 224

"Poetry of the Golden Age" is prerequisite to course 264A "Studies in the Golden Age: Poetry." Three upper division courses in the Department may be included in the total of 10 courses. With the approval of the Graduate Adviser, a maximum of two courses may be taken at the graduate level in closely related fields outside the Department. Course 596 may be included once. Courses 597 and 598 do not count toward the degree.

Comprehensive Examination Plan. The Department favors this plan and will approve the Thesis Plan only in exceptional circumstances. See *Thesis Plan* below. Ten courses, distributed as stated above, are required for this plan. The examination is administered by a standing committee of six members of the Department, appointed by the Chair. Each of the three fields of study is represented by two professors. The student elects one of the three fields as his/her major, and the other two become the minors. A reading list for candidates in each specialty, with required readings in the minor fields as well, is available and constitutes the basis of the examination. Given in the Fall, Winter and Spring Quarters, the examination is entirely written and is of six hours duration. Three hours are devoted to the major (e.g., Spanish literature) and 1½ hours to each of the minors (e.g., Spanish-American literature, Linguistics). It is graded by the M.A. examination committee, whose decision is final. The examination is graded "High Pass", "Mid Pass", "Low Pass", "Not Passed". A grade of "Low Pass" results in a terminal M.A. If a student does not pass the examination or any part thereof, he/she may retake the failed portions once, when the examination is next regularly offered. Passing the M.A. examination after repeating one or more failed portions results in a terminal M.A. The M.A. examination must be taken no later than two quarters after course requirements are completed.

Thesis Plan. The Department strongly favors the Comprehensive Examination Plan and will approve M.A. theses only for exceptionally well-qualified students in exceptional circumstances. It is the responsibility of the student to choose an appropriate topic and find a professor willing to direct the thesis. He/she then petitions the Department for authorization to proceed. His/her petition is examined first by the Committee of Graduate Advisers, who make a recommendation. The entire Department then either approves or denies the petition by majority vote. If the petition is approved, a thesis committee is appointed, consisting of a chair in the field of the thesis and two other members of the Department who represent the other two fields. A student may petition for authorization to write an M.A. thesis only after completion of seven courses which count toward the degree. A total of nine courses with a minimum of six courses in the 200 series, of which one must be a seminar and three may be in the 100 series, is required for this degree. Course 598 ("Research for M.A. Thesis") may *not* be included among the nine. After completion of the thesis, the candidate must pass a 3-hour oral examination testing his/her knowledge of the field of his/her thesis and his/her general competence in the areas of the Comprehensive Examination based on the core readings of the M.A. reading list.

Time to Degree. A full-time student, with no deficiencies at entrance, taking three courses per quarter, should complete the coursework and the Comprehensive Examination four quarters from admission. Teaching assistants and students with deficiencies at entrance will require longer. Non-TA's are expected to complete seven courses each 3-quarter period; TA's, five. See "Disqualification" below.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Application
596	4-8	Letter	4 units may apply toward the M.A.
597	4-8	S/U	does not count toward the M.A.
598	4-8	S/U	does not count toward the M.A.

Disqualification. The Committee of Graduate Advisers in the Department reviews the progress of each student at the end of each academic year. If the advisers find that a student is not making satisfactory progress, they propose a probationary period during which certain conditions must be met. The Chair of the Department then advises the student in writing of the decision of the graduate advisers in his/her case. If the student is unwilling to comply with the expectations of the Chair and the Committee of Graduate Advisers, he/she is subject to dismissal.

Not making satisfactory progress is defined as follows: (1) failure to maintain 3.0 grade point average; (2) failure to remove lapsed Incomplete grades during period specified; (3) failure to complete at least five courses in each full academic year for TA's; for non TA's, seven courses per year. Reduced programs may be approved in extraordinary cases upon petition to the Chair who refers it to the Committee of Graduate Advisers; (4) failure to complete language requirement during or before the last quarter of coursework; (5) failing M.A. examination in two attempts — no degree awarded; (6) passing M.A. examination "Low Pass" — terminal M.A. awarded; (7) passing M.A. examination on second attempt — terminal M.A. awarded.

Appeals. An appeal may be presented in writing to the Chair of the Department, who in turn, presents the student's case first to the Committee of Graduate Advisers and if needed, then to the faculty of the Department whose decision is final.

Master of Arts in Luso-Brazilian Language and Literatures

Admission Requirements. The UCLA B.A. in Portuguese or its equivalent is required. Students admitted from elsewhere whose preparation is considered deficient are required to make up their deficiencies by taking a specified number of relevant undergraduate courses in the Department. These courses may be taken concurrently with graduate courses, but they do not count toward the M.A. degree. Three letters of recommendation are also required. These should be preferably from professors with whom the applicant has studied in the major field, who can comment on his/her potential as a graduate student. In addition, the Graduate Record Examination Aptitude Tests are required. A combined score of 1000 is preferred, although more weight is given to the Verbal than to the Quantitative aspects. The graduate advisers meet as a committee and make a final decision in each case.

Advising. All students working toward the M.A. are advised by the Graduate Adviser for Luso-Brazilian, Prof. C.L. Hulet. Each new graduate student must make an appointment with him through the Department Graduate Counselor. Appointments are scheduled during the week preceding the start of classes in the Fall, Winter and Spring Quarters. During the interview, the student and Prof. Hulet discuss general requirements and decide on a program of courses for the quarter. After this initial interview, the student is required to consult him at the beginning of each quarter for a review of his/her progress toward the degree. Prof. Hulet also approves the student's study list at this time, if the student is making satisfactory progress. Address inquiries to: Ms. Joanne March, Graduate Counselor, Department of Spanish and Portuguese, 5325 Rolfe Hall, Tel: 825-7091.

Fields of Study. Portuguese literature; Brazilian literature; Portuguese linguistics. At the M.A level, all students are expected to work in all three fields.

Foreign Language Requirement. One language besides Portuguese. Any language which has a written literature is acceptable. For languages in which an Educational Testing Service (ETS) test exists, passing the test fulfills the requirement. In languages where no such test is available, passing a test administered by the relevant language department fulfills the requirement. It may also be met by evidence of completion of five quarters of college level courses in the language with grade B or better. The language requirements must be met no later than the same quarter in which the final course requirement is completed.

Course Requirements. Nine courses are required, of which a minimum of six must be in the 200 series. Three upper division courses in the Department may be included in the total requirement of nine courses. With the adviser's approval, two graduate courses outside the Department in closely related fields may also be included. Course 596 may be included twice.

Comprehensive Examination Plan. The Department strongly favors this plan and will approve the Thesis Plan only in exceptional

cases. (See *Thesis Plan* below.) The examination is administered by a committee for Luso-Brazilian language and literatures, composed of those members of the Department who teach the relevant graduate courses. The examination, based on reading lists, is divided into three major parts: 1) a 3-hour written examination in Portuguese literature; 2) a 3-hour written examination in Brazilizan literature; and 3) a 1-hour written examination in the history and structure of the Portuguese language. The examination is given in the Fall, Winter and Spring Quarters. It is graded "High Pass", "Mid Pass", "Low Pass", "Not Passed". A grade of "Low Pass" results in a terminal M.A. Portions of the exam not passed may be repeated once, whenever the examination is next regularly offered. Passing the exam after repeating failed portions results in a terminal M.A.

Thesis Plan. The Department strongly favors the Comprehensive Examination Plan and will approve M.A. theses only for exceptionally well-qualified students in exceptional circumstances. It is the responsibility of the student to choose an appropriate topic and to find a professor willing to direct the thesis. He/she then petitions the Department for authorization to proceed. His/her petition is examined by the Committee of Graduate Advisers and then voted upon by the entire Department. If the petition is approved, a thesis committee is appointed, consisting of a chair in the field of the thesis and two other members of the Department. After completion of the thesis, the candidate must pass a 3-hour oral examination testing his/her knowledge of the field of his/her thesis and his/her general competence in the areas of the Comprehensive Examination based on the core readings of the M.A. reading list.

Time to Degree. A full-time student, with no deficiencies at entrance, taking three courses per quarter, should complete the coursework and the Comprehensive Examination four quarters from admission. Teaching assistants and students with deficiencies at entrance will require longer. Non-TA's are expected to complete seven courses each 3-quarter period; TA's five. See "Disqualification" below.

500 Series Course Limitations.

Course No.	Unit Value	Type of Grading	Application
596	4-8	Letter	2 4-unit courses apply toward the M.A.
597	4-8	S/U	does not count toward the M.A.
598	4-8	S/U	does not count toward the M.A.

Disqualification. The Committee of Graduate Advisers in the Department reviews the progress of each student at the end of each academic year. If the advisers find that a student is not making satisfactory progress, they propose a probationary period during which certain conditions must be met. The Chair of the Department then advises the student in writing of the decision of the Graduate Advisers in his/her case. If the student is unwilling to comply with the expectations of the Chair and the Committee of Graduate Advisers, he/she is subject to dismissal.

Not making satisfactory progress is defined as follows: (1) failure to maintain 3.0 grade point average; (2) failure to remove lapsed Incomplete grades during period specified; (3) failure to complete at least five courses in each full academic year for TA's; for non-TA's, seven courses per year. Reduced programs may be approved in extraordinary cases upon petition to the Chair who refers it to the Committee of Graduate Advisers; (4) failure to complete the language requirement during or before the last quarter of coursework; (5) failing M.A. examination in two attempts — no degree awarded; (6) passing M.A. examination "Low Pass" — terminal M.A. awarded; (7) passing M.A. examination on second attempt — terminal M.A. awarded.

Appeals. An appeal may be presented in writing to the Chair of the Department, who in turn, presents the student's case first to the Committee of Graduate Advisers and if needed, then to the faculty of the Department whose decision is final.

The Ph.D. in Hispanic Languages and Literatures

Admission Requirements. The UCLA M.A. in Spanish or Luso-Brazilian Language and Literatures, or the equivalent is required. Three letters of recommendation are also required from professors familiar with the applicant's work as a graduate student, to be addressed to his/her capacity for research-oriented doctoral studies and possible entry into the profession. The Graduate Record Examination Aptitude Test is also required. A combined score of 1000 is preferred, and the Verbal score is considered more important than the Quantitative. The Graduate Advisers meet as a committee and reach a collective decision in each case.

Final Admission to the Doctoral Program. Students who hold the M.A. in Spanish or Luso-Brazilian Language and Literatures from UCLA fall into one of three categories and are so notified upon receipt of the degree. The categories are: (a) *Low Pass* (Terminal M.A.) — Students who pass with terminal M.A.'s are not eligible for admission into the Ph.D. program. (b) *Mid-Pass* — Students in this category may continue toward the Ph.D. on the following probationary basis:

(1) Take a minimum of three additional graduate courses with three different members of the Department, with acceptable grades.
(2) Find a tenured professor who is willing to direct the dissertation.
(3) File Form I which is considered by the Graduate Advisers Committee in consultation with the professors with whom the student has studied. The entire Department then votes to accept or reject the student. If accepted, the student will be advised to form his/her guidance committee.

(c) *High Pass* — Students who pass the M.A. in this category ("with distinction") are automatically eligible to proceed to step (2) under (b) above.

Students who hold the M.A. from other institutions will not be assigned to a guidance committee until their second quarter of studies in the Department, after complying with the provisions set forth in the "Mid Pass" category. In some cases, they may be required to pass the UCLA M.A. examination, normally in the second or third quarter of residence.

The guidance committee directs the student's program of study from this point on. It is composed of a chairperson, who represents the student's major field (e.g., 20th Century Spanish literature) and under whom the student proposes to write his/her dissertation, and four other members of the Department, who represent the four minor fields. It is the student's responsibility to approach the professor he/she wants on his/her committee and secure their consent. As soon as possible after Form I has been approved, the student meets with his/her guidance committee for the purpose of working out his/her program of courses and setting a tentative date for the Qualifying Examinations. The student prepares a "Study Report" (forms available from Department Graduate Counselor) listing the graduate courses he/she has taken at UCLA and elsewhere, to be analyzed and discussed at the meeting. This meeting is the most important administrative act in the student's progress toward the Ph.D. It should be emphasized that the course requirements listed below are the minimum acceptable to the Department. The guidance committee is the final authority in each individual case. A student who has not met with his/her committee and placed himself/herself under its direction is not officially in the Ph.D. program.

Advising. All students working toward the Ph.D. who have not yet been authorized to form their guidance committee are advised by graduate advisers who represent the broad fields of interest within the Department: Spanish literature (Profs. C.B. Johnson, P.C. Smith), Spanish-American literature (Profs. G. Luzuriaga, J.M. Oviedo), Luso-Brazilian language and literatures (Prof. C.L. Hulet), linguistics and philology (Profs. S.L. Robe, C.P. Otero). Each new graduate student must make an appointment through the Department Graduate Counselor with the adviser who represents his/her major field of interest. Appointments are scheduled during the week preceding the start of classes in the Fall, Winter and Spring Quarters. During the interview, the student and his/her adviser discuss general re-

quirements and plan a program of courses for the quarter. After this initial interview, the student is required to consult his/her adviser at the beginning of each quarter for a review of his/her progress toward the degree. The adviser also approves the student's Study List at this time, if the student is making satisfactory progress.

Students who have formed their guidance committee are advised principally by the chairperson of that committee, but their Study List continues to be signed each quarter by the Graduate Adviser. Address all inquiries to Ms. Joanne March, Graduate Counselor, Department of Spanish and Portuguese, 5325 Rolfe Hall, Tel: 825-7091.

Major Fields. The Department recognizes the following fields of specialization, from which the student selects *one* major and *four* minors: a) Spanish linguistics and philology; b) Medieval and Renaissance Spanish literature; c) Golden Age Spanish literature; d) 18th and 19th Century Spanish literature; e) 20th Century Spanish literature; f) Colonial and 19th Century Spanish American literature; g) 20th Century Spanish American literature; h) Portuguese linguistics and philology; i) Portuguese literature; j) Brazilian literature; k) Spanish and Luso-Brazilian Folklore.

Foreign Language Requirements. A reading knowledge of two foreign languages in addition to both Spanish and Portuguese is required. The languages are chosen by the student in consultation with his/her guidance committee with a view to their usefulness in his/her proposed research (e.g., Latin and Arabic or Hebrew for Medieval studies). For languages in which an Educational Testing Service (ETS) test exists, passing the appropriate test fulfills the requirement. In languages where there is no such test, passing an examination administered by the relevant language department fulfills the requirement. It may also be met by evidence of completion of at least five quarters of college level courses in the language with grade B or better. Finally, the Department will accept evidence of fulfillment of a language requirement in connection with an M.A. obtained elsewhere. The language requirement must be satisfied no later than the quarter before the quarter in which the Qualifying Examinations are taken.

Course Requirements. After the B.A., 18 graduate courses in the Department distributed as follows: (a) General requirements: Courses M200 (Bibliography), M201 (Literary Criticism), M203A, (Development of the Spanish and Portuguese Languages); (b) courses in the major: The number to be determined by the guidance committee; (c) courses in the four minor fields: The minimum requirement for a minor is one graduate preseminar (200-249) followed by the appropriate seminar (250-299). The requirements in any minor field may be increased at the discretion of the guidance committee in consideration of the student's preparation; (d) one additional graduate course in a field not covered in (a), (b),and (c); (e) three upper division courses in Portuguese and/or Brazilian literatures are also required.

Written and Qualifying Examination. The Qualifying Examinations are given during the Fall, Winter and Spring Quarters and consist of: (a) a 3-hour written examination in the major field; (b) four 1-hour written examinations, one in each minor field; (c) a 2-hour oral examination on the five fields and at which the student's prospectus for his/her dissertation is also discussed and approved. Five weeks is normally the maximum time allowed for completion of the series of examinations. The candidate is notified of success or failure by the chairperson of his/her committee immediately following the oral. Failed portions of the examination may be retaken once after such remedial preparation as the committee may specify. Upon passage of the entire series of examinations, the student is eligible to apply for formal advancement to candidacy for the Ph.D. and may proceed to write his/her dissertation.

Doctoral Committee. At least two months before the date of the Qualifying Examinations, the student files the form "Nomination of Doctoral Committee" with the Graduate Division through the Department Graduate Counselor. This form lists the names of the five members of the guidance committee and two additional members from outside the Department who will also pass on the student's written and oral examinations. It is the student's responsibility to approach the two "outside" members and secure their consent. The 7-member body, thus constituted, is the student's official doctoral committee and is so recorded by the Graduate Division.

The Dissertation. The dissertation may be written on any subject within the general area of Hispanic Languages and Literatures. The subject and general approach are proposed by the student, discussed at the Oral Qualifying Examination, and approved by the doctoral committee. The chair of the committee is the director and first reader of the dissertation. It is also read by one other committee member who is also a member of the Department and by one "outside" committee member. It may also be read by other members, or by the entire committee, at the committee's discretion. *Note:* If more than five years have elapsed between advancement to candidacy and presentation of the dissertation, the Department may require the student to revalidate his/her Qualifying Examination.

Final Oral Examination Following Completion of the Dissertation. The Final Oral Examination is optional at the committee's discretion.

Time to Degree. For full-time students taking three courses per quarter, the following figures are optimal: (a) From graduate admission to award of M.A.: four quarters; (b) from award of M.A. to authorization to form guidance committee: one quarter; (c) from formation of guidance committee to Qualifying Examination: three to five quarters; (d) from passage of Qualifying Examination (advancement to candidacy) to presentation of the dissertation: 3 to 15 quarters; e) from graduate admission to award of the degree (or normative time-to-degree): five years (15 quarters).

Candidate in Philosophy Degree. The C.Phil. degree is available upon formal advancement to candidacy.

Disqualification. The Committee of Graduate Advisers in the Department reviews the progress of each student at the end of each academic year. If the Advisers find that a student is not making satisfactory progress, they propose a probationary period during which certain conditions must be met. The Chair of the Department then advises the student in writing of the decision of the Graduate Advisers in his/her case. If the student is unwilling to comply with expectations of the Chair and the Committee of Graduate Advisers, he/she is subject to dismissal.

Not making satisfactory progress is defined as follows: (1) failure to maintain 3.0 grade point average; (2) failure to remove lapsed Incomplete grades during period specified; (3) failure to complete at least five courses in each full academic year for TA's; for non-TA's, seven courses per year. Reduced programs may be approved in extraordinary cases upon petition to the Chair who refers it to the Committee of Graduate Advisers; (4) failure to complete the language requirement during or before the last quarter of coursework.

Appeals. An appeal may be presented in writing to the Chair of the Department, who in turn, presents the student's case first to the Committee of Graduate Advisers and, if needed, then to the faculty of the Department whose decision is final.

Spanish

Graduate Courses

M200. Bibliography. (Same as Portuguese M200.) Meets three hours weekly. Identification and analysis of bibliographical sources for work by doctoral candidates in their fields of specialization.
Mr. Benítez, Mr. Rodríguez-Cepeda

M201. Literary Criticism. (Same as Portuguese M201.) Meets three hours weekly. Definition and discussion of methods of literary criticism.
Mr. Benítez, Mr. Otero

M203A-M203B. The Development of the Portuguese and Spanish Languages. (Same as Portuguese M203A-M203B.) Prerequisites: course M118, 100, or consent of instructor. Intensive study of the historical development of the Portuguese and Spanish languages from their origin in spoken Latin.
Mr. Otero, Mr. Smith

204A-204B. Transformational Grammar. Meets three hours weekly. Prerequisite: course 204A is prerequisite to 204B, or consent of instructor. A transformational approach to the Spanish language, with some consideration of the bearing of syntax, semiology, and phonology on style, metaphor and meter.
Mr. Otero

206. Linguistics. Meets three hours weekly. Prerequisite: course 115 or equivalent. A study of theoretical synchronic linguistics as applied to Spanish.
Mr. Otero, Ms. Plann

209. Dialectology. Meets three hours weekly. Prerequisite: course 100 or 115 or equivalent. 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.
Mr. Robe

222. Medieval and Renaissance Poetry. Meets three hours weekly. Readings and lectures on Spanish poetry from the beginnings to 1550.
Mr. Gimeno

223. Medieval and Renaissance Prose. Meets three hours weekly. Readings and lectures on Spanish prose from the beginnings to 1550.
Mr. Gimeno

224. The Poetry of the Golden Age. Meets three hours weekly. Readings and lectures on the main poets and poetic movements of the Golden Age.
Mr. Rodríguez-Cepeda, Mr. Morris

225. The Drama of the Golden Age. Meets three hours weekly. Readings and lectures on the "comedia." Mr. Rodríguez-Cepeda

226. Prose of the Golden Age. Meets three hours weekly. Readings and lectures on fictional, didactic, religious, and historial writings. Mr. Johnson

227. Cervantes. Meets three hours weekly. Readings and lectures on the works of Cervantes.
Mr. Johnson

230. Neoclassicism and Romanticism. Meets three hours weekly. Readings and lectures on representative works of the period. Mr. Benítez

231. The 19th Century Novel. Meets three hours weekly. Readings and lectures on the novel of the 19th century. Mr. Benítez, Mr. Smith

232. The Generation of 1898. Meets three hours weekly. Readings and lectures on representative works of the generation. Mr. Barcia, Mr. Morris

233. Contemporary Spanish Drama. Meets three hours weekly. Readings and lectures on the theater since 1898. Mr. Barcia, Mr. Morris

234. Contemporary Spanish Poetry. Meets three hours weekly. Readings and lectures on poetry since 1898. Mr. Barcia, Mr. Morris

235. Contemporary Spanish Prose. Meets three hours weekly. Readings and lectures on the novel, the short story, and the essay since 1898.
Mr. Barcia, Mr. Morris

237. Chroniclers of the Americas. Meets three hours weekly. Readings and lectures on the "Cronistas de Indias." Ms. Arora, Mr. Robe

239. Neoclassic and Romantic Prose and Poetry in Spanish America. Meets three hours weekly. Intensive study of Neoclassicism and Romanticism in Spanish America. Mr. Oviedo, Mr. Skirius

240. The Modernist Movement. Meets three hours weekly. An intensive study of the important writers of this movement during the period 1880-1916.
Mr. Luzuriaga

243. Contemporary Spanish American Poetry. Meets three hours weekly. Intensive study of the important poets of Spanish America since 1916.
Mr. Oviedo

244. Contemporary Spanish American Novel and Short Story. Meets three hours weekly. A study of the important novelists and short story writers from Modernism to the present. Mr. Oviedo, Mr. Reeve

245. Contemporary Spanish American Essay. Meets three hours weekly. Intensive study of the important essayists of the 20th century. Mr. Skirius

246. Contemporary Spanish American Theater. Meets three hours weekly. A study of the principal dramatists and theater movements in the twentieth century. Mr. Luzuriaga

M249. Hispanic Folk Literature. (Same as Folklore M249 and Portuguese M249.) Meets three hours weekly. An intensive study of folk literature as represented in a) ballad and poetry; b) narrative and drama; c) speech. Ms. Arora, Mr. Robe

Seminars

M251. Studies in Galegan-Portuguese and Old Spanish. (Formerly numbered 253.) (Same as Portuguese M251.) Prerequisites: course M203A-M203B. Problems related to the historical development of Galegan-Portuguese and Old Spanish. Meets two hours weekly. Mr. Otero, Mr. Smith

256A-256B. Studies in Linguistics and Dialectology. Meets two hours weekly. Problems in the analysis and description of the contemporary language. Directed toward independent research.

256A. Studies in Linguistics. Prerequisite: course 206. Mr. Otero

256B. Studies in Dialectology. Prerequisite: course 209. Mr. Robe

262A-262B-262C. Studies in Medieval and Renaissance Literature.

262A. Lyric Poetry. Meets two hours weekly. Prerequisite: course 222. Mr. Gimeno

262B. Epic Poetry. Meets two hours weekly. Prerequisite: course 222. Mr. Gimeno

262C. Prose Writers. Meets two hours weekly. Prerequisite: course 223. Mr. Gimeno

264A-264D. Studies in the Golden Age.

264A. Poetry. Meet two hours weekly. Prerequisite: course 224.
Mr. Johnson, Mr. Morris, Mr. Rodríguez-Cepeda

264B. The "Comedia." Meets two hours weekly. Prerequisite: course 225.
Mr. Johnson, Mr. Rodríguez-Cepeda

264C. Studies in Prose of the Golden Age. Meets two hours weekly. Prerequisite: course 226.
Mr. Johnson, Mr. Rodríguez-Cepeda

264D. Don Quijote. Meets two hours weekly. Prerequisite: course 227.
Mr. Johnson, Mr. Rodríguez-Cepeda

270A-270B. Studies in 18th and 19th Century Spanish Literature.

270A. Poetry, Drama and Prose. Meets two hours weekly. Prerequisite: course 230. Mr. Benítez

270B. The Novel. Meets two hours weekly. Prerequisite: course 231. Mr. Benítez, Mr. Smith

272A-272D. Studies in 20th Century Spanish Literature.

272A. The Novel. Meets two hours weekly. Prerequisite: course 232 or 235. Mr. Barcia, Mr. Morris

272B. The Theater. Meets two hours weekly. Prerequisite: course 233. Mr. Barcia, Mr. Morris

272C. Poetry. Meets two hours weekly. Prerequisite: course 234. Mr. Barcia, Mr. Morris

272D. The Essay. Meets two hours weekly. Prerequisite: course 235. Mr. Barcia, Mr. Morris

277. Studies in Colonial Spanish American Literature. Meets two hours weekly. Prerequisite: course 237. Ms. Arora

278. Studies in 19th Century Spanish American Literature. Meets two hours weekly. Prerequisite: course 239. Mr. Oviedo

280A-280D. Studies in Contemporary Spanish American Literature.

280A. Modernist Poetry. Meets two hours weekly. Prerequisite: course 240. Mr. Luzuriaga

280B. Post-Modernist Poetry. Meets two hours weekly. Prerequisite: course 243. Mr. Oviedo

280C. Novel and Short Story. Meets two hours weekly. Prerequisite: course 244. Mr. Reeve

280D. The Essay. Meets two hours weekly. Prerequisite: course 245. Mr. Skirius

M286A-M286B-M286C. Studies in Hispanic Folk Literature. (Same as Folklore M286A-M286B-M286C.)
286A. The Romancero. Meets two hours weekly. Prerequisite: course 222.
286B. Narrative and Drama. Meets two hours weekly. Prerequisite: course M249. Ms. Arora, Mr. Robe
286C. Ballad, Poetry and Speech. Meets two hours weekly. Prerequisite: course M249.
Ms. Arora, Mr. Robe

Professional Courses

310. The Teaching of Spanish in the Elementary School. Meets three hours weekly. Prerequisite: course 115.

370. The Teaching of Spanish in the Secondary School. Meets three times weekly. Prerequisite: course 115.

372. The Language Laboratory. (½ course) Meets three hours weekly. Preparation of materials. Equipment, techniques, and problems related to the operation of the language laboratory. Mr. Otero

495. The Teaching of Spanish in the University. Prerequisite: Graduate Standing in the department. Basic concepts of modern theories of language and language acquisition which underlie modern methods of second language teaching. Methods of second language teaching: Pattern Drill; "Inductive Grammar" (de Sauzé; Pucciani and Hamel; Barcia) and others. Teaching practice. Observation and discussion of selected classes. Lesson preparation and execution. Test construction. Mr. Quícoli

Individual Study and Research

596. Directed Individual Study or Research. (1 to 2 courses) Prerequisites: approval of graduate adviser and of Chair of the department. Study or research in areas or on subjects not offered as regular courses. Work evaluated on letter grade basis. No more than one full course may count toward the M.A. course requirement. Limited to a maximum of two full courses in any graduate program.

597. Preparation for Graduate Examinations. (1 to 2 courses) Prerequisites: official acceptance of candidacy by the department, and approval of graduate adviser. Individual preparation for the comprehensive examination for the M.A. degree or the qualifying examinations for the Ph.D. degree. Graded S/U. May be taken only once for each degree examination and only in the quarter that comprehensive or qualifying examinations are to be taken.

598. Research for M.A. Thesis. (1 to 2 courses) Prerequisite: consent of the guidance committee. Research in preparation of the master's thesis. Graded S/U.

599. Research for Ph.D. Dissertation. (1 to 2 courses) Prerequisite: restricted to those who have passed the qualifying examinations for the doctor's degree. Research for and preparation of the Ph.D. dissertation. Graded S/U.

Portuguese

Upper Division Courses

100. Phonology and Pronunciation.

101A. Advanced Reading and Conversation.

101B. Advanced Composition and Style.

102A-102B. Intensive Portuguese.

103. Syntax.

M118. History of the Portuguese and Spanish Languages (Same as Spanish M118.).

120A. Survey of Portuguese Literature.

120B. Survey of Portuguese Literature.

121A. Survey of Brazilian Literature.

121B. Survey of Brazilian Literature.

124. Medieval Portuguese Literature.

126. Renaissance and Baroque Portuguese Literature.

127. Colonial Brazilian Literature.

128. 18th and 19th Century Portuguese Literature.

129. Romanticism in Brazil.

135. Naturalism, Realism and Parnassianism in Brazil.

136. Contemporary Portuguese Literature.

137. Contemporary Brazilian Literature.

140A-B. Luso-Brazilian Literature in Translation.

140B. Brazilian Literature.

*Graduate Courses

M200. Bibliography. (Same as Spanish M200.) Meets three hours weekly. Identification and analysis of bibliographical sources for work by doctoral candidates in their fields of specialization.
Mr. Benítez, Mr. Rodríguez-Cepeda

M201. Literary Criticism. (Same as Spanish M201.) Meets three hours weekly. Definition and discussion of methods of literary criticism.
Mr. Benítez, Mr. Otero

M203A-M203B. The Development of the Portuguese and Spanish Languages. (Same as Spanish M203A-M203B.) Prerequisites: courses M118, 100, or consent of instructor. Intensive study of the historical development of the Portuguese and Spanish languages from their origin in spoken Latin.
Mr. Otero, Mr. Smith

204A-204B. Transformational Grammar. Prerequisite: consent of instructor; course 204A or consent of instructor is prerequisite to 204B. A transformational approach to the Portuguese language, focused especially on the syntactic component and its relations with other aspects of grammar. Mr. Quícoli

206. Portuguese Linguistics. Lecture, three hours. Prerequisite: consent of instructor. A study of theoretical synchronic linguistics of Portuguese.
Mr. Quícoli

C242A-C242D. Special Topics in Portuguese Literature. (1 course each) Lecture, two hours.

C242A. Medieval Portuguese Literature. Meets two hours weekly. May be offered concurrently with Portuguese C124. Prerequisite: consent of instructor.
Mr. Dias

C242B. Renaissance and Baroque Literature. Meets two hours weekly. May be offered concurrently with Portuguese C126. Prerequisite: consent of instructor.
Mr. Dias

C242C. 18th and 19th Century Literature. Meets two hours weekly. May be offered concurrently with Portuguese C128. Prerequisite: consent of instructor.
Mr. Dias

C242D. Contemporary Portuguese Literature. Meets two hours weekly. May be offered concurrently with Portuguese C136. Prerequisite: consent of instructor.
Mr. Dias

C243A-C243D. Special Topics in Brazilian Literature. (1 course each) Lecture, two hours.

C243A. Colonial Literature. Meets two hours weekly. May be offered concurrently with Portuguese C127. Prerequisite: consent of instructor. Mr. Hulet

C243B. Romanticism in Brazil. Meets two hours weekly. May be offered concurrently with Portuguese C129. Prerequisite: consent of instructor.
Mr. Hulet

C243C. Naturalism, Realism and Parnassianism. Meets two hours weekly. May be offered concurrently with Portuguese C135. Prerequisite: consent of instructor. Mr. Hulet

C243D. Contemporary Brazilian Literature. Meets two hours weekly. May be offered concurrently with Portuguese C137. Prerequisite: consent of instructor.
Mr. Hulet

M249. Hispanic Folk Literature. (Same as Folklore M249 and Spanish M249.) Meets three hours weekly. An intensive study of folk literature as represented in a) ballad and poetry; b) narrative and drama; c) speech. Ms. Arora, Mr. Robe

M251. Studies in Galegan-Portuguese and Old Spanish. (Same as Spanish M251.) Prerequisite: course M203A-M203B. Problems related to the historical development of Galegan-Portuguese and Old Spanish. Meets two hours weekly.
Mr. Otero, Mr. Smith

252A-252B-252C. Special Studies in Portuguese Literature.

252A. Prose Fiction. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Dias

252B. The Poetry. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Dias

252C. The Theater. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Dias

253A-253B-253C. Special Studies in Brazilian Literature.

253A. Prose Fiction. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Hulet

253B. The Poetry. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Hulet

253C. The Theater. Meets two hours weekly. Prerequisite: consent of instructor. Mr. Hulet

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

Professional Course

370. The Teaching of Portuguese in the Secondary School. For future teachers in this field.
Mr. Hulet

Individual Study and Research

596. Directed Individual Study or Research. (1 to 2 courses) Prerequisites: approval of graduate adviser and of Chair of the Department. Study or research in areas or on subjects not offered as regular courses. Work evaluated on letter grade basis. No more than two full courses may count toward the M.A. course requirement. Limited to a maximum of three full courses in any graduate program.

597. Preparation for Graduate Examination. (1 to 2 courses) Prerequisites: official acceptance of candidacy by the department, and approval of graduate adviser. Individual preparation for the comprehensive examination for the M.A. degree. Graded S/U. May be taken only once for each degree examination and only in the quarter that comprehensive or qualifying examinations are to be taken.

598. Research for M.A. Thesis. (1 to 2 courses) Prerequisite: consent of the guidance committee. Research in preparation of the master's thesis. Graded S/U.

599. Research on Dissertation. (½ to 2 courses) Research for and preparation of the doctoral dissertation. Restricted to those who have passed the Qualifying Examinations for the doctor's degree. Graded S/U.

Theater Arts

(Office, 2310 Macgowan Hall)

William B. Adams, M.A., *Professor of Theater Arts.*
John R. Cauble, M.A., *Professor of Theater Arts.*
Shirley M. Clarke, A.A., *Professor of Theater Arts.*
Robert F. Corrigan, M.A., *Professor of Theater Arts.*
Donald B. Crabs, M.A., *Professor of Theater Arts (Chair of the Department).*
Arthur B. Friedman, Ph.D., *Professor of Theater Arts.*
Henry Goodman, Ph.D., *Professor of Theater Arts.*
Richard C. Hawkins, M.A., *Professor of Theater Arts.*
Melvyn B. Helstien, Ph.D., *Professor of Theater Arts.*
Carl R. Mueller, Ph.D., *Professor of Theater Arts.*
Louis C. Stoumen, B.A., *Professor of Theater Arts.*
Frank A. Valert, *Professor of Theater Arts.*
Abe V. Wollock, Ph.D., *Professor of Theater Arts.*
John W. Young, M.A., *Professor of Theater Arts.*
Robert E. Lee, D. Litt., *Adjunct Professor of Theater Arts.*
Walden P. Boyle, Ph.D., *Emeritus Professor of Theater Arts.*
Michael Gordon, M.F.A., *Emeritus Professor of Theater Arts.*
Edward Hearn, M.A., *Emeritus Professor of Theater Arts.*
John H. Jones, M.A., *Emeritus Professor of Theater Arts.*
Walter K. Kingson, Ed.D., *Emeritus Professor of Theater Arts.*
Frank D. LaTourette, M.Litt., *Emeritus Professor of Theater Arts.*
William W. Melnitz, Ph.D., *Emeritus Professor of Theater Arts.*
Darrell E. Ross, M.F.A., *Emeritus Professor of Theater Arts.*
Nicholas K. Browne, Ed.D., *Associate Professor of Theater Arts.*
William Froug, B.J., *Associate Professor of Theater Arts.*
Gary A. Gardner, Ph.D., *Associate Professor of Theater Arts.*
Robert H. Hethmon, Ph.D., *Associate Professor of Theater Arts.*
Dan F. McLaughlin, M.A., *Associate Professor of Theater Arts.*
Stephen D. Mamber, Ph.D., *Associate Professor of Theater Arts.*
Sylvia E. Moss, B.A., *Associate Professor of Theater Arts.*
Delia N. Salvi, Ph.D., *Associate Professor of Theater Arts.*
Ruth E. Schwartz, Ph.D., *Associate Professor of Theater Arts.*
Howard Suber, Ph.D., *Associate Professor of Theater Arts.*
William D. Ward, M.F.A., *Associate Professor of Theater Arts.*
William T. Wheatley, Ph.D., *Associate Professor of Theater Arts.*
Margaret L. Wilbur, M.F.A., *Associate Professor of Theater Arts.*
Theodore Apstein, Ph.D., *Adjunct Associate Professor of Theater Arts.*
William H. Menger, M.A., *Emeritus Associate Professor of Theater Arts.*
Alan M. Armstrong, M.F.A., *Assistant Professor of Theater Arts.*
Teshome H. Gabriel, Ph.D., *Assistant Professor of Theater Arts.*
Michael J. Hackett, Ph.D., *Assistant Professor of Theater Arts.*
Patricia M. Harter, M.A., *Assistant Professor of Theater Arts.*
Michael S. McLain, M.F.A., *Assistant Professor of Theater Arts.*
Joanne T. McMaster, M.F.A., *Assistant Professor of Theater Arts.*
Robert A. Nakamura, M.F.A., *Assistant Professor of Theater Arts.*
Thomas J. Orth, M.F.A., *Assistant Professor of Theater Arts.*
Jorge R. Preloran, B.A., *Assistant Professor of Theater Arts.*
Richard S. Rose, M.F.A., *Assistant Professor of Theater Arts.*
Carol J. Sorgenfrei, Ph.D., *Assistant Professor of Theater Arts.*
Richard Walter, M.A., *Assistant Professor of Theater Arts.*

•

John D. Boehm, M.A., *Lecturer in Theater Arts.*
Robert Bookman, J.D., *Visiting Lecturer in Theater Arts.*
Edgar L. Brokaw, B.A., *Lecturer in Theater Arts.*
Ivan N. Cury, M.F.A., *Visiting Lecturer in Theater Arts.*
Gordon Davidson, M.A. *Visiting Lecturer in Theater Arts.*
Anthony De Longis, B.A., *Visiting Lecturer in Theater Arts.*
Hugh M. Grauel, M.A., *Lecturer in Theater Arts.*
H. Peter Guber, L.L.M., *Visiting Lecturer in Theater Arts.*
John Ingle, M.A., *Visiting Lecturer in Theater Arts.*
Mark McCarty, M.A., *Lecturer in Theater Arts.*
Kerry A. Madden, M.F.A., *Visiting Lecturer in Theater Arts.*
Richard R. Portman, *Visiting Lecturer in Theater Arts.*
Beverly Robinson, M.A., *Visiting Lecturer in Theater Arts.*
Robert Rosen, M.A., *Adjunct Lecturer in Theater Arts.*

Robert Trachinger, *Visiting Lecturer in Theater Arts.*
George Van Buren, *Visiting Lecturer in Theater Arts.*

The Department of Theater Arts offers the Master of Arts (M.A.), Master of Fine Arts (M.F.A.) and Doctor of Philosophy (Ph.D.) in the following specialization: (1) Motion Picture/Television and (2) Theater.

ALL APPLICANTS PLEASE NOTE: The Motion Picture/Television Division's M.F.A. program is currently being revised and students admitted for the 1982-83 academic year and following are advised to check with the Department for description of such change.

Admission Requirements

Students are generally admitted in the Fall Quarter only. Applicants for another quarter should consult the Department. 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 Graduate Admissions, and no screening examination prior to admission is required.

Admission requires:

(1) Fulfilling the minimum requirements of the Graduate Division for admission to graduate study at UCLA.

(2) Completion of an undergraduate major in theater or motion picture/television comparable to that offered by the UCLA Department of Theater Arts. Students whose theater arts preparation is deficient, as determined by the appropriate admissions committee, will be required to take work additional to the degree program to make up such deficiencies.

(3) Providing the Department with at least three letters of reference and a statement of purpose.

In addition to (1), (2) and (3) above, further requirements for specific programs are as follows:

For the M.A. Program in Theater

A sample of scholarly or critical writing, statement of purpose and such other information (resume, portfolio, script interview, etc.) as may be required to establish the quality of work in the specialization.

For the M.A. Program in Motion Picture/Television

Students without a comparable undergraduate major to that of the Department must submit for consideration, film and television work done at other institutions (confirmed by the instructors originally involved as the student's personal work), as well as evidence of their history background production and scriptwriting competency. Or, alternatively, students may be required to take such courses at UCLA as will fulfill these requirements, though these courses will not count towards the minimum of nine courses required for the M.A. program.

For the M.F.A. Program in Theater

Evidence of creative ability and professional intent. At the time of the application to the Graduate Division, the student must clearly state the degree objective (M.F.A.) and the area of specialization within the M.F.A. (Theater) program: Acting, Design (Scenic, Costume, or combined Scenic and Costume Design), Directing, Playwriting, Puppet Theater, Theater Management or Theater Technology.

In *Acting:* Submit strong letters of recommendation from directors familiar with their work, a complete resume of their experience, photographs, and audition for the M.F.A. faculty committee or its representative.

In *Design:* (Scenic, Costume, or the two combined): submit examples of creative work such as a portfolio of designs, sketches, working drawings, and photographs.

In *Directing:* submit evidence of motivation and talent through production and prompt books, reviews and critical commentaries, strong letters of recommendation, and arrange for an interview, when feasible.

In *Playwriting:* submit examples of creative writing such as full-length plays, one-act plays, and screenplays.

In *Puppet Theater:* submit actual puppets, photographs, and audition for the M.F.A. Committee or its representative.

In *Theater Management:* submit a complete resume and a statement outlining the areas of specific interest and intent.

In *Theater Technology:* submit evidence of ability demonstrated through production books, working drawings, lighting plots, photographs, and strong letters of recommendation.

For the M.F.A. Program in Motion Picture/Television

Applicants with diverse backgrounds and undergraduate majors other than Theater Arts are encouraged. The applicant must state clearly his/her degree objective (M.F.A.) and the area of specialization desired within the program — animation, filmmaking, screenwritng, or television production.

For those intending to concentrate in 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.

For those intending to concentrate in writing, a finished full-length feature script in dramatic form including dialogue must be submitted.

For the Ph.D. Program in Both Motion Picture/Television and Theater

Completion of a master's level degree, M.A. or M.F.A., equivalent to those offered by the UCLA Department of Theater Arts. In exceptional cases students with a M.A. outside the field will be considered for direct admission to the program. Evidence of potential as a practicing scholar is indicated by:

(a) breadth and depth of advanced coursework in history, theory and criticism;

(b) imagination and quality of scholarly writing;

(c) academic achievements and potential as indicated by grade point average, Graduate Record Examination scores, awards, scholarships, teaching assistantships, etc.;

In addition, for the Theater applicant evidence of artistic competence in some facet of theater production.

The dossier submitted for application for admission must contain a letter describing the applicant's reasons for wishing to earn the Ph.D. in Theater Arts; and the master's thesis or samples of writing that demonstrate a high level of ability to write criticism or historical narrative.

Simultaneous application can be made for both the M.A. and Ph.D. programs in Theater.

Further information may be obtained from: Student Affairs Office, 1327 Macgowan Hall, Department of Theater Arts, University of California, Los Angeles, CA 90024.

Advising

In most instances, the chair of the appropriate graduate committee acts as principal adviser to students in the program, though some assignments may be made by the chair to other members of the faculty.

For the Theater Ph.D. applicant without a M.A. from the Department of Theater Arts, a screening examination is administered during the first week of the Fall Quarter based on a reading list supplied at the time of application. Results of this examination may require the completion of background courses.

Students meet with advisers for program planning prior to the beginning of each quarter and again early in each quarter for formal approval of the Study List. Students are urged to confer with their advisers as frequently as necessary to discuss program changes, drop-add petitions, etc.

Each program has a specific procedure and calendar for assignment of each student's committee. Consult the adviser for this information.

Assessment of academic progress of each student in the program is made by the appropriate committee during the final examination week of each quarter. The adviser then notifies the student of problems, when warranted, in writing and assists in planning a solution. Normally, committee recommendations are referred directly to the Chair of the Department, though in some instances special problems may be referred to the Divisional faculty for recommendation of action to the Chair.

It should be noted that the status of all students in the Ph.D. program in the Department is provisional until students have completed all residence, course and language requirements and have passed both Written and Oral Qualifying Examinations so as to advance to candidacy.

M.F.A. students in Motion Picture/Television wishing to change from a production emphasis to a writing emphasis must petition the M.F.A. committee, submitting an original feature length screenplay for their judgment. If approved for transfer, the student must enroll in a writing course and complete at least one additional full-length screenplay before being eligible to be advanced to candidacy for the final project. If denied transfer, the student must continue the production emphasis.

Major Fields or Subdisciplines

The M.A. program in Theater is a *general* graduate degree, though there are opportunities for the students, through their electives and thesis or research paper topics, 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.

The M.A. program in Motion Picture/Television requires that the student be conversant with both film and television and that he/she will be tested on each in the Comprehensive Examination.

The areas of specialization for the M.F.A. program in Theater include: Acting, Design (Scenic, Costume or combined Scenic and Costume Design), Directing, Playwriting, Puppet Theater, Theater Management, and Theater Technology.

The M.F.A. program in Motion Picture/Television includes specializations in animation, filmmaking (fictional, documentary, education), screenwriting, and television production. Subdisciplines include: ethnographic film and broadcast journalism.

The Ph.D. student in Theater is expected to be knowledgeable regarding theater history and theory, critical methods, theatrical production and dramatic literature.

The Ph.D. student in Motion Picture/Television is 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

The M.A. program in Theater does not require a foreign language, but students are urged to develop a proficiency in either French, German, Spanish or Italian.

In the M.A. program in Motion Picture/Television, a student may be required to demonstrate competence in a foreign language if necessary to support the research in the student's area of specialization.

There is no foreign language requirement for either M.F.A. degrees.

For the Ph.D. programs in both specializations, mastery of one foreign language is required. Mastery must be demonstrated in one of the following ways: 1) Passing of the Educational Testing Service examination (in French, Spanish, German, or Russian) with a score of 500 or better; 2) Completion of Course 5, or the equivalent, with a minimum grade of C, in any foreign language; 3) Passing of a UCLA language examination given in any foreign language department and administered by an approved examiner. This examination must confirm competence at the level of Course 5. When mastery of more than one foreign language is necessary for the candidate's dissertation study, the candidate will be required to take courses or to pass examinations in the additional language(s). Normally, the student must pass the required foreign language examination(s) by the end of the first year of residence.

In certain cases with committee approval, Motion Picture/Television Ph.D. students may substitute a research tool such as statistics, computer science, etc., for the foreign language.

Course Requirements

Following are the course requirements for each program:

For the M.A. Program in Theater: Students are required to complete a minimum of 9½ courses (38 units), five of which must be at the graduate level, in at least one year (three quarters) of intensive study, laboratory exercises and research leading to the successful completion of either the Thesis or Comprehensive Examination Plan. The student in Theater is required to take an active part in the production program of the Department as partial fulfillment of the degree program.

The required courses are 200 245A-B, and 272A, B, C, which is a 2-unit in-progress course with a grade and units awarded only upon completion of 272C in the third quarter. After being advised, the student will select six courses, including one graduate course in theater history and another in theater production theory as well as four other courses which emphasize production practice or historical study. Students accepted for joint M.A. and Ph.D. programs are required to take 205A, B and C.

For the M.A. Program in Motion Picture/Television: 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, one course in research methodology (Theater Arts 200) is required of all students. All six of the above courses must be completed with grades of "B" or better. The specific courses most beneficial to the student's program are selected in consultation with an adviser.

For the M.F.A. Program in Theater: A total number of 18 courses (72 units) is required for the M.F.A. degree. Each specialization has different requirements. Additional courses to those required must be planned and approved by the student's adviser.

Acting: Required courses: 16½, graduate 13½. Courses are 420A, B, C, 421A, B, C, 424A, B, C, D, E, F, 425A, B, C, D, E, F, 472 (½ course to be taken three times), and three adviser-selected courses in theater history and literature.

Design — Costume: Required courses: 16½, all graduate. Courses are: 245A, B, 442A, B, C, 443 (½ course to be taken six times), 444 (to be taken three times), 472 (½ course to be taken three times), 596D (to be taken three times), and 596F.

Design — Scenic: Required courses: 17½, graduate 13½. Courses are: 240, 241, 243A, B, C, 245A, B or expertise in design (scenic, lighting, costume), directing, and management established by a portfolio or similar evidence which will then allow for adviser-selected electives, 443 (½ course to be taken four times), 472 (½ course to be taken three times), 596D (to be taken three times). Upper division courses: 140B, 141B, 146 and 149A, B.

Design — Combined Scenic-Costume: Required courses: 25½, graduate 21½. The student undertaking this specialization must meet all the requirements for both the Costume Design specialization and the Scenic Design specialization. This usually necessitates an additional year of study for a total of three years or nine quarters.

Directing: Required courses: 16½, graduate 15½. Courses are: 205A or B or C, 240, 245A, B, 420, B, C, 460 A, B, C, 462, 463, 472 (½ course to be taken three times), and 596C. Upper division course: 132.

Playwriting: Required courses: 11 or 12½, graduate 8½ minimum. Courses are: 230A, B, C, 430A, B, C, 472 (½ course to be taken three times), and upper division course 132, plus three chosen from the following: 123, 162B, 174, 190A, B, 205A, B, C, 240, 245A, B.

Puppet Theater: Required courses: 12, graduate 8½. Courses are: 205A or B or C, M217, 245A, B, 417, 472 (½ course to be taken three times), and 596C. Upper division courses: 117 (to be taken three times), 162A or B, and 181A.

Theater Management: Required courses: 13, graduate 11. Courses are: Management 257, Management 270, Management 271, 245A, B or expertise in design (scenic, lighting, costume), directing, and management established by a portfolio or similar evidence which will then allow for adviser-selected electives, 290A, B, 472 (½ course to be taken four times), 596A, and 596F. Upper division courses: 132 and 171A.

Theater Technology: Required courses: 16, graduate 10½. Courses are: 240, 241, 243A, 245A, B, or expertise in design (scenic, lighting, costume), directing, and management es-

tablished by a portfolio or similar evidence which will then allow for adviser-selected electives, 443 (½ course to be taken two times), 472 (½ course to be taken three times), 596D or F (to be taken three times). Upper division courses: 140B, 141B, 144A, B, 146 and 149A, B.

For the M.F.A. Program in Motion Picture/Television: Eighteen courses are required for the degree. Five of these courses must be graduate level. At least three courses must be in the 200 series seminar courses in film history aesthetics or structure.

For the Ph.D. Program in Theater: During the first six quarters (two academic years), students must complete a minimum of 12 graduate courses (200 or 500 level) and two professional courses (495A and 495B or 495C-D). Three of these graduate courses will be required (216A, B, C). The remaining nine courses will be elective graduate courses, seminars or tutorials. Of these electives, no more than four may be taken outside of the Division and no more than two of all the electives may be tutorials. In addition, the distributions of electives must include at least one each in the areas of Western and non-Western theater study. These adviser-supported and M.A./Ph.D. Committee-approved electives must augment the required courses in such a manner as to constitute a definable area of study which will be associated with the dissertation topic. The dissertation will be an historical, critical, analytical or experimental study of a theater topic.

For the Ph.D. Program in Motion Picture/Television: During the first six quarters in the Motion Picture/Television specialization students must take 13½ courses. During the first year of residence 211, 215 and 273 must be completed, while 274 is required in the last quarter of residence. In addition to this core sequence, 496 is also required. Further, each student must select nine graduate elective courses, at least six of which must be drawn from Film and Television Studies offerings. With the advice and approval of the Committee on Film and Television Studies, the student selects from these elective courses three areas of concentration, chosen so as to broaden their 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/TV, 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

For the Ph.D. student in both Divisions: Every student completes Theater Arts 495A or 496 depending on program requirements.

Thesis Plan

Application to the M.A. student in Theater only: Before beginning work on the thesis, the student 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 then formed which consists of three faculty members recommended by the committee and approved by the Chair of the Department. The thesis committee is generally established when the student is within one quarter of completing the coursework, at which time the student is eligible to advance to candidacy.

The student is required to present the adviser and the committee with a prospectus of the thesis with a petition to advance to candidacy. Both are used as the basis for approval.

An outside thesis committee member is not required but is considered desirable when the student's thesis topic calls for special expertise from outside the Department.

If a student's thesis fails to pass the committee, the student is allowed to present a rewritten version for approval. The number of times a thesis may be presented depends upon assessments made by the committee.

Comprehensive Examination Plan

For the M.A. Student in Theater: The examination consists of a 50-page research paper which may be associated with 4 units of credit 596A; a 1-hour oral defense of the paper; and a 2-part, 6-hour written examination covering theater history and production practice. This procedure is supervised by a 3-member faculty committee appointed in the same manner and time sequence as the thesis committee. The examination normally occurs during the final quarter of residency at which time the student should have advanced to candidacy.

For the M.A. Student in Motion Picture/Television: The examination consists of two written parts plus an oral, administered by a comprehensive examination committee appointed by the Chair of the Film/Television Studies Committee with the approval of the Chair of the Department. The first written part consists of three days of examination, four hours each day, and tests a broad range of knowledge in motion picture/television. An oral examination follows the successful evaluation of part one of the written examination. During the examination, the student also proposes the subject and scope of the required scholarly essay. When the student has satisfactorily completed all sections of the first part of the written examination and the oral examination, that student is then permitted to proceed to the writing of the 50-page scholarly essay, which tests the student's ability to write critically and in depth about a specialized area. The scholarly essay must be completed within two quarters of the time the student has passed the first part of the written examination. Upon completion of the written examination, the oral examination, and the scholarly essay, the student's examining committee renders the judgment (1) pass, or (2) fail. The examining committee may pass the student on some portions of the 3-day written examination but fail the student on other portions. In this event, the student may take the failed portions of the examination one more time in the following quarter.

For the M.F.A. Student in Theater: Generally, the student's faculty committee becomes the comprehensive examination committee with the approval of the Chair of the Department and is responsible for administering the Comprehensive Examination.

The Plan is satisfied by the fulfilling of a series of creative projects appropriate to the student's specialization. On completion of the final creative project or last quarter of residency, whichever is last, the student must file for advancement to candidacy. The committee will then review and evaluate the record of each candidate for a degree. A student's participation in the final review will be at the discretion of the committee.

For the M.F.A. Student in Motion Picture/Television: The Comprehensive Plan is satisfied by the fulfilling of projects appropriate to the student's specialization. No later than the beginning of the final quarter of residence, the student must file the appropriate documents for advancement to candidacy and receive approval for the advancement from the M.F.A. committee. The chair of the M.F.A. committee, with approval of the Chair of the Department, appoints the comprehensive examination committee consisting of three faculty members. On completion of the final creative project the M.F.A. comprehensive examination committee as a body reviews and evaluates this creative work with the individual student and submits its final recommendation to the Chair of the Department.

A student who fails to pass the review and evaluation by the M.F.A. comprehensive examination committee may be reexamined. The number of reviews will be determined by the committee with final approval by the Chair of the Department.

Written and Oral Qualifying Examinations

At the end of the second quarter of residence, the doctoral student must submit himself or herself to a preliminary oral examination to be conducted by a representative committee of the faculty of his or her specialization. Each committee will specify the areas of review and test the student's background preparation and progress to date and determine general fitness to continue in the doctoral program. This examination may result in dropping the student from the doctoral program. The committee may reexamine the student at a subsequent time to determine fitness to continue in the program.

After completion of all language and course requirements, approval of a dissertation prospectus, and appointment of a dissertation committee, the student will be required to pass the Written Qualifying Examination set by the faculty. The Written Qualifying Examination will be 12 hours of examination, administered in 4-hour segments during three successive days. Information regarding the examination is available from the appropriate Divisional Ph.D. Committee. Students who fail parts or the whole of this examination may be granted by the appropriate committee the privilege of being reexamined in part or in whole. After this examination is satisfactorily passed, the Chair of the Department of Theater Arts recommends the formation of a doctoral committee; the committee's members may be nominated by the candidate, but must be endorsed by the appropriate Divisional Ph.D. committee. A change in membership is a formal procedure that must be endorsed by all members of the doctoral committee and approved by the Chair of the Department.

After passing the Written Qualifying Examination, the student will be required to pass the Oral Qualifying Examination conducted by his/her doctoral committee. The Oral Qualifying Examination is open only to the members of the doctoral committee and the student. The student is advanced to candidacy only upon satisfactory completion of the Qualifying Examination.

A dissertation demonstrating the candidate's ability to carry out independent and significant inquiry in an historical, theoretical, or critical field of Theater Arts is required. Final award of the Ph.D. depends on satisfactory completion of the dissertation. A student who has advanced to candidacy for the degree of Ph.D. in Theater Arts will be awarded the Candidate in Philosophy Degree (C. Phil.) in accordance with the normal provisions approved by the Graduate Council.

Final Oral Examination Following Completion of the Dissertation

A Final Oral Examination, held after the completion of the dissertation, may be required at the option of the members of the dissertation committee.

Time to Degree

For the M.A. Student in the Theater

Normal Progress Toward the Degree: From graduate admission with no deficiencies to award of the Master of Arts degree, a minimum time period of three quarters will be necessary for completion of the required courses, the production requirements, and thesis or Comprehensive Examination. The Department does not permit students to work on a master's degree and a teaching credential simultaneously.

For the M.A. Student in Motion Picture/Television

Normal Progress Toward the Degree: From graduate admission with no deficiencies to award of the Master of Arts degree, a minimum time period of four quarters will be necessary for completion of the required courses, Part I and Part II of the Comprehensive Examination. At the end of the third quarter, the student is eligible to take the M.A. Comprehensive Examination consisting of two parts: Part I, testing the student's breadth of knowledge, may be taken no earlier than the end of the third quarter of residence and no later than the end of the fifth quarter of residence. Failure to comply with this regulation will result in lapse of status. Part II of the Comprehensive Examination, the scholarly essay, will generally be completed in the summer or a quarter subsequent to that in which the first part of the examination has been taken. The scholarly essay must be completed and approved by the Film and Television Studies Committee no later than two quarters after the student has completed Part I of the Comprehensive Examination.

Maximum residency allowed for the M.A. programs is seven quarters.

For the M.F.A. Student in Theater

Normal Progress Toward the Degree: All areas of specialization, except Directing and the combined Scenic and Costume Design, involve students in their specialized areas for a continuous period of two years (6 quarters). The Directing and Puppetry programs may require an additional quarter or Summer Session. The combined Scenic and Costume Design program involves the students for a full 3-year period (9 quarters). Maximum residency in any M.F.A. program is 10 quarters.

For the M.F.A. Student in Motion Picture/Television

Normal Progress Toward the Degree:

(1) From graduate admission to completion of first projects: 2 to 3 quarters;

(2) From graduate admission to completion of required courses: 6 to 9 quarters;

(3) From graduate admission to award of degree: maximum 10 quarters.

Students not making normal progress toward the degree may be dropped from the program. Continuance in the program of students on probation is determined by the Master of Fine Arts committee with the final approval of the Chair of the Department.

Caution is stressed regarding the production time, crew and budget considerations plus the considerable expense borne by the student in production. Without these sometimes formidable resources, students become disheartened, ignore their program schedule and otherwise jeopardize their continuance. Extensive planning, care, caution and financial resources are required for the production specialization of this program.

For the Ph.D. Student in Either Division

From graduate admission to the Written and Oral Qualifying Examination: 6 quarters.

From graduate admission to the approval of the dissertation prospectus: 3 to 6 quarters.

From approval of dissertation prospectus to the Oral Qualifying Examination: 1 quarter.

From advancement to candidacy to the Final Oral Examination: 3 quarters.

From graduate admission to the award of the degree: 9 quarters.

500 Series Course Limitations

For the M.A. student in Theater

Only 8 units from the 596 series may apply toward the total course requirement, and only 4 of these units may apply toward the five minimum graduate requirements. No 598 units may apply toward the total course requirement.

For the M.A. Student in Motion Picture/Television

Only 8 quarter units of 596A, B, C and 598 may apply toward the total course requirement, and none of these courses may apply toward the minimum graduate course requirement.

For the M.F.A. Student in Theater

Only 16 quarter units of 596 series may apply toward the total course requirement and the minimum graduate course requirement.

For the M.F.A. Student in Motion Picture/Television

Only 16 quarter units of 596 may apply toward the total course requirement.

Only 4 quarter units of 596A and 4 quarter units of 596B may be taken prior to advancement to candidacy.

596C through 596F may be taken only after advancement to candidacy.

Disqualification

A student must maintain the required 3.0 grade point average in all courses and pass required examinations. However, the student's various creative projects, or courses in research methodology and history seminars may be evaluated as indicative of insufficient talent, development, imagination, or motivation. The student so evaluated will be informed of the recommendation of the appropriate committee, and placed on probation by the Department. During the following quarter, the student must provide sufficient evidence of improvement to remove the probationary status. If evidence of improvement is not presented, the committee will propose to the Chair of the Department a recommendation for disqualification and dismissal.

Appeals

The process involves the following steps:

(1) The student submits to the Chair of the Department of Theater Arts (copy to the chair of the appropriate committee) a written appeal stating the specific causes the student believes to be the grounds for reconsideration.

(2) The chair of this committee submits to the Chair of the Department of Theater Arts a written response (with a copy to the student).

(3) The Chair of the Department of Theater Arts appoints an ad hoc committee consisting of three tenured members of the faculty. This committee will review the written materials in 1 and 2 above. They will also meet separately with the concerned committee and the student. The ad hoc committee will forward its recommendation to the Chair of the Department, reporting in writing its basis for judgment.

(4) The Chair of the Department advises the student of his/her decision in writing.

(5) Further appeal may be made to the Dean of the Graduate Division.

(6) A Department faculty representative may be present at each review hearing.

Other Relevant Information

For the M.F.A. Student in Theater

Field Work: 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 Parks and Recreation.

Internship: Some specialization such as Theater Management and Puppet Theater may take advantage of opportunities offered by professional organizations.

For the M.F.A. Student in Motion Picture/Television

Field work and internships are not required but may be taken as courses which will apply toward the degree.

For the Ph.D. Student in Both Divisions

Neither field work nor internship is required for the Ph.D. degree in Theater Arts.

*Graduate Courses

ALL APPLICANTS PLEASE NOTE: The Motion Picture/Television Division's M.F.A. program is currently being revised and students admitted to the 1982-83 academic year and following are advised to check with the Department for description of such change.

*For concurrently scheduled courses ("C" prefix) suitably separate activities and/or standards for performance and evaluation will be applied for graduates and undergraduates.

Certain graduate courses concerned with individual student projects may be repeated for credit upon recommendation of the departmental graduate adviser. Not open to undergraduate students. See College of Fine Arts, Unit Requirements.

200. Bibliography and Methods of Research in Theater Arts.

Section 1. Theater.

Section 2. Motion Pictures.

Section 3. Television-Radio.

202A. Seminar in Western Classical Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. An examination of theatrical production and dramatic form in the Greek and Roman periods. This course may be taken for a maximum of 3 courses (12 units).

202B. Seminar in Medieval Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected studies of theatrical production and dramatic form in the Middle Ages. This course may be taken for a maximum of 3 courses (12 units).

202C. Seminar in Renaissance and Baroque Theater. Discussion, three hours. Prerequisites: Graduate Standing and 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. This course may be taken for a maximum of 3 courses (12 units).

202D. Seminar in Bourgeois and Romantic Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected studies in theater architecture, theatrical production, and dramatic form in English and Continental theater from 1700 to 1870. This course may be taken for a maximum of 3 courses (12 units).

202E. Seminar on the Modern Consciousness in Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Study of the prototypes of modern experience as encountered in the work of Ibsen and Strindberg. This course may be taken for a maximum of 3 courses (12 units).

202F. Seminar in Modern Realism. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected studies of the theater's response to science and technology, politics, and revolution. This course may be taken for a maximum of 3 courses (12 units).

202G. Seminar in Modern Theatricalism. Discussion, three hours. Prerequisites: Graduate Standing and 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. This course may be taken for a maximum of 3 courses (12 units).

202M. Seminar in American Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected studies in the development of theatrical production and dramatic writing in the American theater. This course may be taken for a maximum of 3 courses (12 units).

202N. Seminar in Theater Architecture and Scenic Design. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected studies of the playhouse and scenic environment, relating historic and contemporary concepts. This course may be taken for a maximum of 3 courses (12 units).

202P. Seminar in Traditions of African Theater. Discussion, three hours. Prerequisites: Graduate Standing and 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. This course may be taken for a maximum of 3 courses (12 units).

202R. Seminar in East Asian Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected topics in the theater forms of East Asia, including dramatic literature, costume, theater spaces and critical writings. This course may be taken for a maximum of 3 courses (12 units).

202S. Seminar in South Asian Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected topics in the theater forms of South Asia, including dramatic literature, costume, theater spaces and critical writings. This course may be taken for a maximum of 3 courses (12 units).

202T. Seminar in Southeast Asian Theater. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Selected topics in the theater forms of Southeast Asia, including dramatic literature, costume, theater spaces and critical writings. This course may be taken for a maximum of 3 courses (12 units).

203. Seminar in Film and Other Arts. Discussion, three hours; additional hours as required. Prerequisites: Graduate Standing and 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. This course may be taken for a maximum of 3 courses (12 units).

205A. The Background of Theatrical Art. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. An analysis of major plays, commentaries, and historical materials from the Classical and Medieval periods.

205B. The Background of Theatrical Art. Discussion, three hours. Prerequisites: Graduate Standing and 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. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. An analysis of major plays, commentaries, and historical materials from the Romantic, Naturalistic, and Symbolist periods.

206A. Seminar in European Motion Picture History. Discussion, three hours, additional hours as required. Prerequisites: course 106B, Graduate Standing, and consent of instructor. Studies in selected historical movements such as expressionism, socialist realism, surrealism, neo-realism, New Wave, etc. This course may be taken for a maximum of 3 courses (12 units).

206C. Seminar in American Motion Picture History. Discussion, three hours, additional hours as required. Prerequisites: course 106A, Graduate Standing and consent of instructor. Study of central topics in American film history. This course may be taken for a maximum of 3 courses (12 units).

208A. Seminar in Film Structure. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. A study of the principal topics and lines of inquiry that characterizes the theoretical writings of Arnheim, Eisenstein, Bazin, Mitry, etc.

208C. Seminar in Contemporary Film Theory. Discussion, three hours, additional hours as required. Prerequisites: course 208B, Graduate Standing and consent of instructor. A study of the redefinition of the aims and methods of film theory through contemporary writings.

209A. Seminar in Documentary Film. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. The nonfictional film and its relation to contemporary culture.

209B. Seminar in Fictional Film. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. Film as fiction and its relation to contemporary culture. May be repeated for a maximum of 2 courses (8 units) credit.

M209C. Ethnographic Film. (Same as Anthropology M247A.) Prerequisites: Graduate Standing and consent of instructor. The ethnographic film as a form of realist cinema and its relations to cultural anthropology. Offered in the Fall Quarter.

Mr. Boehm, Mr. Hawkins, Mr. Moerman

209D. Seminar in the Animated Film. 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. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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.

211. Seminar in Historiography. Discussion, three hours. Prerequisite: restricted to Ph.D. students in Motion Picture/Television. 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. Discussion, three hours. Prerequisite: restricted to Ph.D. students in Motion Picture/Television. 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.

216A. Critical and Historical Methods. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Studies in theater historiography and sociological criticism.

216B. Critical Methods. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Studies in critical theories of theatrical form and structure.

216C. Critical Methods. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. Studies in contemporary modes of psychoanalytic and archetypal criticism for the theater.

M217. Seminar in the Puppet Theater. (Same as Folklore and Mythology M219.) Lecture, three hours. Prerequisite: consent of instructor. Studies in the puppet theaters of the world: techniques, literature, aesthetics.

219. Seminar in Film and Society. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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. Course may be taken for a maximum of 2 courses (8 units).

220. Seminar in Television and Society. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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. Course may be taken for a maximum of 2 courses (8 units).

221. Seminar in Film Authors. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. Intensive examination of the works of outstanding creators of films. Course may be taken for a maximum of 3 courses (12 units).

222. Seminar in Film Genres. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. Studies of patterns, styles, and themes of such genres as the Western, gangster, war, science fiction, comedy, etc. Course may be taken for a maximum of 3 courses (12 units).

223. Seminar in Visual Perception. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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.

230A-230B-230C. Advanced Playwriting. Lecture, three hours. Prerequisites: course 130A, Graduate Standing and consent of instructor. Guided completion of a full-length play, or study and preparation for the writing of a thesis play.

240. The Contemporary Playhouse. Discussion, four hours. Prerequisites: Graduate Standing and consent of instructor. Advanced study of the concept, form and function of the contemporary playhouse and its equipment.

241. Research in Technical Theater. Lecture, four hours. Prerequisites: Graduate Standing and consent of instructor. Research in technical processes and equipment in theater.

243A-243B-243C. Advanced Problems in Design for the Theater. Lecture, four hours. Prerequisites: Graduate Standing and consent of instructor. Advanced study and practice in the design of stage productions. Determination of approach and style in scenic design.

245A-245B. Production Planning in Theater. Lecture, two hours; laboratory, two hours. Prerequisites: Graduate Standing and consent of instructor. Development of planning procedures through the execution of a complete plan for producing a multi-scene production. Courses must be taken in sequence.

247. Production Planning in Television. Seminar, three hours; plus field studies in professional motion picture and television studios.

251. Advanced Design for Motion Pictures. (½ to 1 course) Hours to be arranged. Prerequisite: course 151 and/or consent of instructor. May be repeated for a maximum of three courses credit. Advanced study and practice of techniques and methods of design for motion pictures. Art direction for advanced workshop productions in the project sequence.

264. Seminar in Film and Television Direction. Prerequisites: Graduate Standing and consent of instructor. A study, with professional guests, of their work, attitudes, and solutions to problems in directing fictional and documentary films and television.

M265A-M265B. Ethnographic Film Direction. (1 or 2 courses each) (Same as Anthropology M267B-M267C.) Prerequisites: course 209C, Graduate Standing and consent of instructor. Advanced study of problems in the production of ethnographic films. M265A is offered in the Winter Quarter and M265B is offered in the Spring Quarter.

Mr. Boehm, Mr. Hawkins, Mr. Moerman

268. Seminar in the Short Film. Discussion, three hours, additional hours as required. Prerequisites: course 179A, Graduate Standing and 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. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. A study of key aesthetic questions of analysis and evaluation in relation to central works of motion picture criticism. Course may be taken for a maximum of 2 courses (8 units).

271. Seminar in Television Criticism. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. An analysis of major forms of television production and the criticism it has elicited. This course may be taken for a maximum of 2 courses (8 units).

C272A-C272B-C272C. Production and Performance Laboratory. (½ course) Laboratory, to be arranged. Prerequisites: Graduate Standing and consent of instructor. Credit for creative production assignments required of all M.A. students during the first three quarters of residence. Credit will be granted only upon completion of course C272C. Concurrent scheduling with courses C172 and C472.

273. Seminar in Contemporary Film and Television Criticism. Discussion, three hours, additional hours as required. Prerequisite: restricted to Ph.D. students in Motion Picture/Television. Study and practice of the analytic and critical response with emphasis on contemporary film and television.

274. Seminar in Research Design. Discussion, three hours. Prerequisite: second year standing in the Ph.D. program in Motion Picture/Television. An examination of the general principles that govern the formulation of major research projects, and the preparation of a prospectus for the doctoral dissertation.

276. Seminar in Non-Western Films. Discussion, three hours. Additional hours as required. Prerequisites: Graduate Standing and consent of instructor. Study of the aesthetic and ideological impulses of selected films from Asia, Africa, and Latin America.

277. Seminar in Narrative Studies. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and 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. Discussion, three hours and additional hours as required. Prerequisites: Graduate Standing and consent of instructor. An historical survey and critical analysis of public, educational, and instructional television. A laboratory course requiring the preparation of a program plan.

289. Current Business Practices in Motion Picture/Television. Discussion, three hours. Prerequisites: Graduate Standing and 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 repeated for a total of 12 units.

290A. The Role of Management in Artistic Decision Making in the Theater. Lecture, four hours. 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. Lecture, four hours. 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.

291. The Role of Mansgement in Motion Pictures. Prerequisites: Graduate Standing and consent of instructor. A study of the artistic, social, and economic criteria for decision-making in the production and distribution of motion pictures. May be repeated for a total of 12 units.

292. Network Television Management and Decision-Making. Discussion, three hours. Prerequisites: Graduate Standing and consent of instructor. A study of the business structure and the economic, social, and artistic criteria currently utilized by Network Television Management. This course may be taken for a maximum of 2 courses (8 units).

293. Seminar in Film and Television Curatorship. Discussion, three hours, additional hours as required. Prerequisites: Graduate Standing and consent of instructor. Study and practice of issues in archival research and administration.

298A-298B. Special Studies in Theater Arts. (½ to 1 course each) Lecture/discussion, two or four hours. Prerequisites: Graduate Standing and consent of instructor. May be repeated once for credit. Seminar study of problems in theater arts, organized on a topic basis.

Professional Courses

417. Production Project for the Puppet Theater. (2 courses) Laboratory, thirty hours weekly; five hours consultation. Prerequisites: restricted to M.F.A. students; consent of instructor. The design, construction and performance of a full-length production with puppets as the culminating exercise for the candidate for the M.F.A. degree in the Puppet Theater. Students will be 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. Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. Exercises in sense memory, personalization, and objectives to help the student respond truthfully to real and imaginary stimuli by developing concentration, awareness, imagination and spontaneity.

420B. Advanced Techniques in Acting. Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. 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 the student will begin to personalize the character's emotional needs and drives.

420C. Advanced Techniques in Acting. Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. Preparation and presentation of two-person scenes utilizing sensory work and "objectives" on a more refined basis. The student will now be able to find the similarities and differences between himself and the character and be able to play these elements truthfully and spontaneously.

421A. Advanced Projects in Acting. (1 or 2 courses) Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting students in Theater and consent of instructor. Preparation, presentation, and critique of scenes. Systematic role analysis and exercises in acting.

421B. Advanced Projects in Acting. (1 or 2 courses) Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting students in Theater and consent of instructor. Preparation, presentation and critique of scenes. Systematic role analysis and exercises in acting.

421C. Advanced Projects in Acting. (1 or 2 courses) Lecture/laboratory, six hours. Prerequisites: restricted to M.F.A. acting students in Theater and consent of instructor. Class exercises in acting. Preparation and presentation of roles under performance conditions.

423. Advanced Directing of the Actor for Motion Pictures and Television. Laboratory, eight hours. Prerequisites: course 163 and consent of instructor. The Director learns how to build scenes and characters logically and how to sustain these along with emotional and physical continuity. This class utilizes a video-tape recorder in order to simulate the conditions of directing actors before the camera. May be repeated for a maximum of 12 units credit.

424A-424B-424C. Advanced Techniques in Voice for the Stage. (½ course each) Lecture/laboratory, two hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. Development of voice techniques for the stage. Includes work on relaxation, limbering, breathing, articulators, and resonators. Special vocal problems for the actor.

424D-424E-424F. Special Problems in Voice for the Actor. (½ course each) Lecture/laboratory, two hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. 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. (½ course each) Lecture/laboratory, two hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. 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. (½ course each) Lecture/laboratory, two hours. Prerequisites: restricted to M.F.A. acting candidates in Theater and consent of instructor. Physical awareness for the actor, concentrating on individual problems in terms of space, movement, and time. Special emphasis: natural rhythms, relaxation and balance.

430A-430B-430C. Advanced Studies in Playwriting. (1 course, 2 courses, 1 course). Seminar, to be arranged. Prerequisites: courses 230A-230B-230C and consent of instructor. Guidance in the completion of thesis plays.

432. Manuscript Evaluation. Lecture, four hours; laboratory, to be arranged. Prerequisites: course 132 and consent of instructor or admission to M.F.A. writing program and consent of instructor. May be taken twice for credit (once each year of M.F.A. residence). Evaluation of manuscripts of beginning writers including but not limited to those produced in the beginning writing course 134.

434. Advanced Motion Picture/Television Writing. (2 courses) Discussion, three hours. Prerequisites: course 135 and consent of instructor. Advanced problems in the writing of original motion picture/television material. May be repeated for a maximum of 24 units.

437. Nontheatrical Writing for Motion Picture/Television. Discussion, three hours. Prerequisite: consent of instructor. Advanced problems in the field of documentary and special feature programs with emphasis on research and pre-production.

442A-442B-442C. Advanced Problems in Costume Design. Lecture/discussion, four hours. Prerequisite: consent of instructor. Study of costume design for theatrical productions. Development of costume designs from theatrical scripts with emphasis upon production styles and character revelation. The scripts vary in period and style to give design practice in the major costume periods and artistic styles. Restricted to M.F.A. candidates.

443. Problems in Design. (½ or 1 course) 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. Discussion, four hours. Prerequisites: restricted to M.F.A. candidates and consent of instructor. A study of the effect of artistic and stylistic ideas on the mode and dress of men and women. May be repeated for a maximum of 12 units.

446. Production Planning in Motion Pictures. (½ or 1 course) Lecture, three hours; laboratory to be arranged. Prerequisite: consent of instructor.

452A. Advanced Motion Picture/Television Sound. Lecture, four hours; laboratory, four hours. Prerequisite: course 152A and/or consent of instructor. Applications of electronic and acoustic theory to film and television recording and reproduction, including practical demonstrations.

452B. Music Recording Workshop. Lecture, four hours; laboratory, eight hours. Prerequisite: 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. Advanced Motion Picture/Television Sound Re-Recording. Laboratory, eight hours. Prerequisites: courses 152B, 452A, and/or consent of instructor. Techniques of preparation and execution of re-recording using multi-track pickup recording technology, including supervised operational experience.

457. Design for Television. Lecture, one hour; laboratory, three hours. Prerequisite: consent of instructor. Study and practice in design of television productions. Consideration of style as it relates to all elements of design in live and recorded television programs.

460A. Problems in Advanced Direction for the Stage. Lecture, to be arranged. Prerequisites: restricted to M.F.A. candidates and consent of instructor. Preparation and presentation of a published one-act play or its equivalent under rehearsal conditions. Discussion and critique of work in progress.

460B. Problems in Advanced Direction for the Stage. Lecture, to be arranged. Prerequisites: restricted to M.F.A. candidates and consent of instructor. 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. Lecture, to be arranged. Prerequisites: restricted to M.F.A. candidates and consent of instructor. 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. Lecture, to be arranged. Prerequisites: restricted to M.F.A. students and consent of instructor. 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. (2 courses) Prerequisite: consent of instructor. Preparation and presentation of play under fully produced theater conditions. Restricted to M.F.A. students.

464A-464B. Motion Picture Direction. (1 or 2 courses each) Hours to be arranged. Prerequisites: course 179A and consent of instructor, restricted to Motion Picture/Television graduate students only. Special problems in the direction of fictional and documentary motion pictures.

466A-466B. Advanced Television Direction. (1 or 2 courses each) Lecture, two hours; laboratory, six hours. Prerequisite: consent of instructor. Special problems in the direction of dramatic and documentary television programs.

C472. Production and Performance Laboratory. (½ course) Laboratory, hours to be arranged. Prerequisites: admission to the M.F.A. program and consent of instructor. May be repeated for a maximum of 8 units of credit. Credit for creative production projects required of all M.F.A. students. Concurrent scheduling with courses C172 and C272A-C272B-C272C.

C479A-C479B-C479C. Film Project 3. (1, 2 or 3 courses each) Laboratory, hours to be arranged. Prerequisites: course 179B and consent of Production Faculty. The completion of a third film, including its writing, design, production and editing. Course C178 may be offered concurrently with this course.

480A-480B-480C. Workshop in Radio and Television News. Laboratory, eight hours. Prerequisite: consent of instructor. Instruction and supervised exercises in reporting, writing, editing, and producing radio and television news, public affairs, and documentary programs.

482A-482B. Advanced Animation Workshop. (1 or 2 courses each) Lecture, three hours; laboratory to be arranged. Prerequisites: courses 181A-181B-181C and consent of instructor. Organization and integration of various creative arts used in animation, resulting in the production of a complete animated film.

C485A-C485B-C485C. Advanced Television Production. (1 or 2 courses each) Laboratory, sixteen hours. Prerequisites: Project 1 (course 179A), 185, 186A-186B-186C and consent of instructor. Instruction in the creation, preparation, and production of advanced television programs. Course C178 may be offered concurrently with this course.

488A-488B-488C. Educational Television Workshop. Laboratory, eight hours. Prerequisite: consent of instructor. Instruction and supervised exercises in directing and producing television programs for educational purposes.

495A. Problems in the Teaching of Theater Arts. Lecture/laboratory, to be arranged. Prerequisites: Graduate Standing and 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. Lecture/laboratory, to be arranged. Prerequisites: Graduate Standing and consent of instructor. Demonstration of competence in theater production through successful completion of a major teaching production assignment as technical director or designer.

495C-495D. The Problems in the Teaching of Theater Arts. (0 to 1 course) Laboratory, to be arranged. Prerequisites: Graduate Standing and consent of instructor. Demonstration of competence in theater production through successful completion of a major teaching production assignment as theater director. Course to be conducted as a two-quarter sequence offered in Winter and Spring quarters only. Credit will be granted only upon completion of sequence. In-Progress grade only.

496. The Practice of Teaching Theater Arts. (½ course) Discussion, two hours. Prerequisite: required once for all Teaching Assistants or Associates in the Department of Theater Arts. 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. This 2 unit course will not count toward the M.A., M.F.A., or Ph.D. TAs may repeat the course. Graded S/U.

496. Professional Internship in Theater Arts. (1 or 2 or 3 courses) Full or part-time at a studio or on a professional project. Prerequisites: Graduate Standing plus advanced standing in the M.F.A. program and 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. (½ to 2 courses) Prerequisites: approval of Graduate Adviser and Graduate Dean, approval of host campus instructor, Department Chairman and Graduate Dean. The course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. To be graded S/U.

Individual Study and Research

596A. Directed Individual Studies: Research. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

596B. Directed Individual Studies: Writing. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

596C. Directed Individual Studies: Directing. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

596D. Directed Individual Studies: Design. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

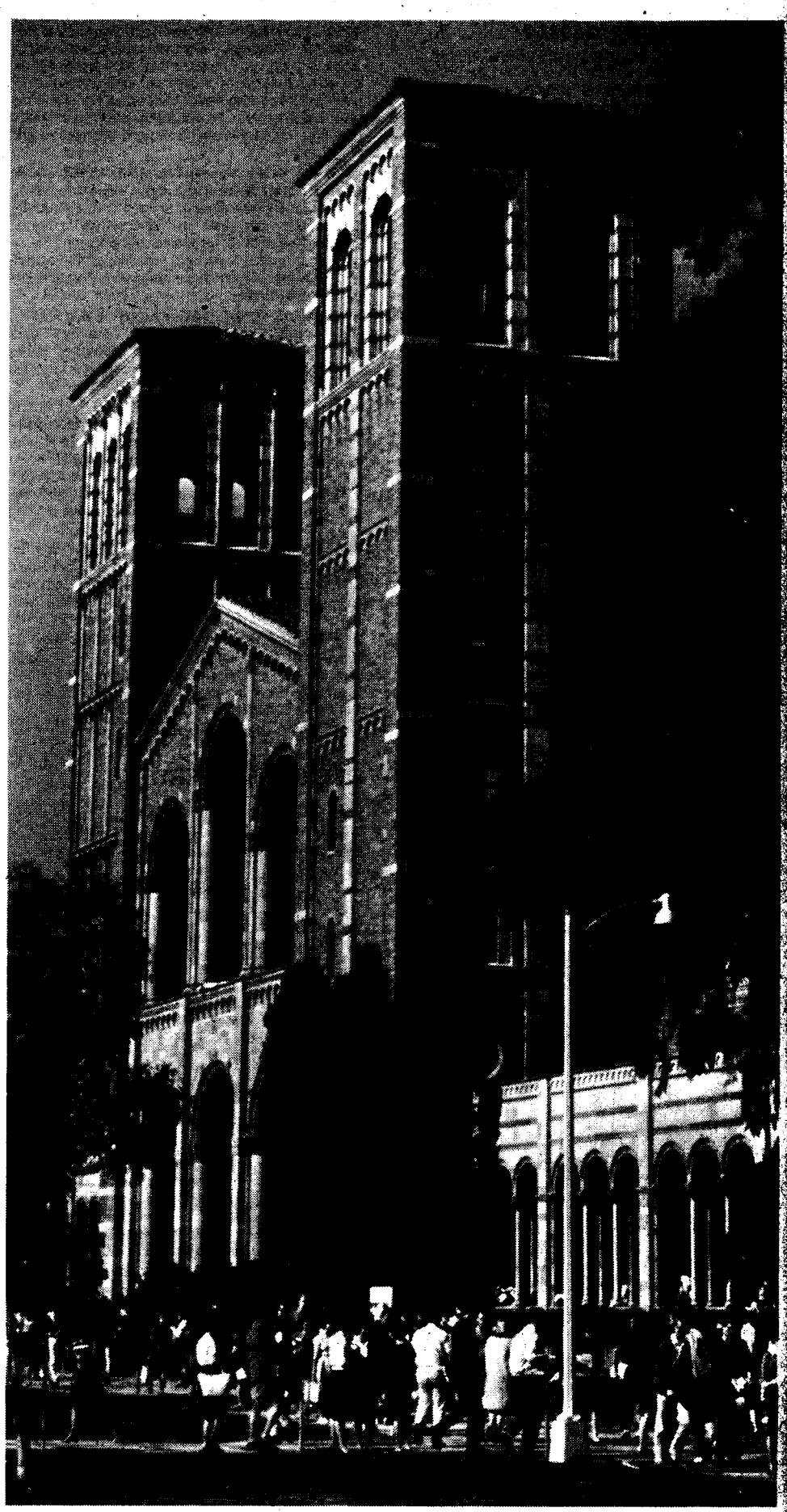
596E. Directed Individual Studies: Acting. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

596F. Directed Individual Studies: Production. (½ to 3 courses) Hours to be arranged. Prerequisite: Graduate Standing. May be repeated by consent of instructor.

597. Preparation for the Qualifying Examination for the Ph.D. in Theater Arts. (½ to 2 courses) May be repeated for a total of three courses.

598. M.A. Thesis in Theater Arts. (½ to 2 courses) Research and writing for the M.A. thesis. Limited to students who have been advanced to candidacy. May be repeated for a total of three courses.

599. Dissertation in Theater Arts. (½ to 2 courses) Research and writing for the doctoral dissertation. Limited to students who have been advanced to candidacy. May be repeated for a total of three courses.



Administrative Officers

REGENTS EX OFFICIO

Governor of California
Edmund G. Brown, Jr.

Lieutenant Governor of California
Mike Curb

Speaker of the Assembly
Willie L. Brown, Jr.

State Superintendent of Public Instruction
Wilson Riles

President of the Alumni Association of the University of California+
Shirley Brown Conner (1983)

Vice President of the Alumni Association of the University of California+
Frank S. Phillips (1983)

President of the University
David S. Saxon

APPOINTED REGENTS+

+Terms of Regents appointed by the Governor expire February 28 of the year named in parentheses, with names arranged in order of original accession to the Board. The Student Regent (Linda Rae Sabo) and Alumni Regents serve a one-year term beginning July 1 and ending June 30 of the year listed.

Edward W. Carter (1988)
Glenn Campbell (1984)
William French Smith (1986)
Robert O. Reynolds (1986)
Dean A. Watkins (1984)
Joseph A. Moore (1990)
John H. Lawrence, M.D. (1988)
William A. Wilson (1988)
Vilma S. Martinez (1990)
John F. Henning (1989)
Stanley K. Sheinbaum (1989)
Yori Wada (1992)
Frank W. Clark, Jr. (1988)
David Geffen (1990)
Willis W. Harman (1990)
Yvonne Brathwaite Burke (1993)
Robert N. Noyce (1992)
Jeremiah F. Hallisey (1993)
Sheldon W. Andelson (1994)
Harold M. Williams (1994)
Linda Rae Sabo (1983)+

Faculty Representatives to the Board of Regents
Oliver A. Johnson, Jr. (September 1, 1980 to August 31, 1982)
Robert E. Connick (September 1, 1981 to August 31, 1983)

PRINCIPAL OFFICERS OF THE REGENTS

President of The Regents
Edmund G. Brown, Jr.

Chair of The Regents
Joseph A. Moore

Vice Chair of The Regents
Glenn Campbell

General Counsel
Donald L. Reidhaar

Secretary
Bonnie M. Smotony

Treasurer
Herbert M. Gordon

OFFICE OF THE PRESIDENT

President of the University
David S. Saxon

Vice President of the University
William B. Fretter

Academic Vice President
William R. Frazer

Vice President — Academic and Staff Personnel Relations
Archie Kleingartner

Vice President — Agriculture and University Services
James B. Kendrick, Jr.

Assistant President — Coordination and Review
Dorothy E. Everett

Vice President — Financial and Business Management
To be named

Executive Assistant to the President
David A. Wilson

OFFICERS EMERITI

President of the University, Emeritus, and Professor of Economics, Emeritus
Charles J. Hitch

President of the University, Emeritus, and Professor of Business Administration, Emeritus
Clark Kerr

Vice President of the University, Emeritus, Professor of Agricultural Economics, Emeritus, and Agricultural Economist, Emeritus
Harry R. Wellman

Vice President — Budget Plans and Relations, Emeritus
Thomas E. Jenkins

University Provost, Emeritus, Chancellor at Santa Cruz, Emeritus, and Professor of Mathematics, Emeritus
Angus E. Taylor

Vice President, Emeritus, and Secretary and Treasurer of The Regents, Emeritus
Robert M. Underhill

Treasurer of The Regents, Emeritus
Owsley B. Hammond

General Counsel of The Regents, Emeritus
Thomas J. Cunningham

Associate Counsel of The Regents, Emeritus
John E. Landon

CHANCELLORS OF THE CAMPUSES

Chancellor at Berkeley
Ira Michael Heyman

Chancellor at Davis
James H. Meyer

Chancellor at Irvine
Daniel G. Aldrich, Jr.

Chancellor at Los Angeles
Charles E. Young

Chancellor at Riverside
Tomas Rivera

Chancellor at San Diego
Richard C. Atkinson

Chancellor at San Francisco
Julius R. Krevans

Chancellor at Santa Barbara
Robert A. Huttenback

Chancellor at Santa Cruz
Robert L. Sinsheimer

UNIVERSITY PROFESSORS

Melvin Calvin, *Emeritus University Professor,* Berkeley, Laboratory of Chemical Biodynamics

Murray Krieger, *University Professor,* Irvine, Department of English and Comparative Literature

Josephine Miles, *Emeritus University Professor,* Berkeley, Department of English

Julian S. Schwinger, *University Professor,* Los Angeles, Department of Physics

Glenn Seaborg, *Emeritus University Professor,* Berkeley, Lawrence Berkeley Laboratory

Neil Smelser, *University Professor,* Berkeley, Department of Sociology

Edward Teller, *Emeritus University Professor,* Livermore, Lawrence Livermore Laboratory

Charles 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

GENERAL ADMINISTRATIVE OFFICERS — UCLA

Chancellor
Charles E. Young, Ph.D.

Executive Vice Chancellor
William D. Schaefer, Ph.D.

Vice Chancellor — Faculty Relations
Harold W. Horowitz, S.J.D.

Vice Chancellor — Graduate Programs and Dean of Graduate Division
Victoria A. Fromkin, Ph.D.

Vice Chancellor—Research Programs
Albert A. Barber, Ph.D.

Vice Chancellor—Student Affairs
Winston C. Doby, Ed.D.

Assistant Executive Vice Chancellor and Assistant to the Chancellor
Tallman Trask III, M.B.A., Ph.D.

Administrative Vice Chancellor
James W. Hobson, M.B.A.

Vice Chancellor—Institutional Relations
Elwin V. Svenson, Ed.D.

Vice Chancellor—Public Affairs
Alan F. Charles, J.D.

Assistant Chancellor—Planning
Adrian H. Harris, M.S.

Executive Assistant to the Chancellor
Rosemary Ford, B.A.

Assistant to the Chancellor—Special Projects
John R. Sandbrook

Director of Hospital and Clinics
Raymond G. Schultze, M.D.

Director of Neuropsychiatric Institute
Louis Jolyon West, M.D.

Director of Neuropsychiatric Institute Hospital and Clinics
Milton Greenblatt, M.D.

Campus Counsel
Patricia M. Jasper, J.D.

University Librarian
Russell Shank, M.B.A., D.L.S.

Dean of Continuing Education
Leonard Freedman, Ph.D.

DEANS OF THE COLLEGES AND SCHOOLS

Graduate School of Architecture and Urban Planning
Harvey S. Perloff, Ph.D.

School of Dentistry
James R. Hooley, D.D.S.

Graduate School of Education
John I. Goodlad, Ph.D., L.H.D., LL.D.

School of Engineering and Applied Science
Russell R. O'Neill, Ph.D.

College of Fine Arts
Robert H. Gray, M.F.A.

School of Law
Susan W. Prager, J.D.

College of Letters and Science

Provost
Raymond L. Orbach, Ph.D.

Division of Humanities
Philip Levine, Ph.D.

Division of Life Sciences
John D. O'Connor, Ph.D.

Division of Physical Sciences
Harold K. Ticho, Ph.D.

Division of Social Sciences
Antony R. Orme, Ph.D.

Graduate School of Library and Information Science
Robert M. Hayes, Ph.D.

Graduate School of Management
J. Clayburn LaForce, Jr., Ph.D.

School of Medicine
Sherman M. Mellinkoff, M.D.

Associate Dean
A. Frederick Rasmussen, Jr., M.D., Ph.D.

School of Nursing
Mary E. Reres, R.N., M.P.N., Ed.D.

School of Public Health
Roger Detels, M.D., M.S.

School of Social Welfare
Maurice F. Connery, D.S.W.



Index

Academic Residence, 22, 32, 34
Address, Change of, 25
Administrative Officers, 322
Admissions, 15-17
Advance Loan Check, 19
Advancement to Candidacy, 32, 36
Affirmative Affairs Office, Graduate, 19
African Area Studies (Interdepartmental), 33, 39, 40, 44
African Studies Center, 9, 176
American Culture, Institute of, 9
American Indian Studies (Interdepartmental), 33, 39, 40, 48
American Indian Studies Center, 10
Anatomy, 33, 34, 37, 40, 49
Anesthesiology, 33, 40, 52
Anthropology, 33, 37, 39, 40, 54
Application, 15, 16, 17
Applied Linguistics (Interdepartmental), 34, 37, 39, 40, 60
Applied Mathematics, *see* School of Engineering and Applied Science, 130
Applied Plasma Physics, *see* School of Engineering and Applied Science, 130
Archaeology (Interdepartmental), 33, 37, 39, 40, 62
Archaeology, Institute of, 10
Architecture and Urban Planning, Graduate School of, 14, 33, 38, 39, 40, 65
Art, Design, and Art History, 33, 37, 40, 77
Articulated Degree Programs, 17, 38-39
Asian American Studies (Interdepartmental), 33, 39, 40, 83
Asian American Studies Center, 10
Assistantships, 18, 24
Associated Students (ASUCLA), 4
Astronomy, 33, 37, 40, 84
Atmospheric Sciences, 33, 34, 37, 40, 86
ATAS-UCLA Television Archives, 8

Bacteriology, *see* Microbiology, 220
Biochemistry, 33, 34, 37, 40, 98; *see also* Biological Chemistry, 88
Biocybernetics, *see* School of Engineering and Applied Science, 130
Bioengineering, *see* School of Engineering and Applied Science, 130
Biological Chemistry, 33, 37, 40, 88
Biology, 33, 34, 37, 40, 91
Biomathematics, 33, 37, 40, 95
Biomedical and Environmental Sciences, Laboratory of, 10
Biostatistics, 33, 37, 43; *see also* Public Health, 275
Botanical Gardens, 8
Brain Research Institute, 10
Business Administration, *see* Graduate School of Management, 200

Calendar, v
Cancellation of Registration, 27
Candidacy for Degree, 32, 36
Candidate in Philosophy Degree, 33-34
Caps, Gowns, and Hoods, 29
Car Pools, 4
Card, Registration, 24
Card, Student Photo I.D., 24
Central Ticket Office, 5
Ceramics and Keramic Processing, *see* School of Engineering and Applied Science, 130
Certificate of Completion, 30
Certificate of Resident Study for Foreign Students, 30
Certificate Program, 14
Change of Address/Name, 25
Change of Major, 29
Check Cashing, 5
Chemical, Nuclear, and Thermal Engineering, *see* School of Engineering and Applied Science, 130
Chemistry, 33, 34, 37, 40, 98
Chicano Studies Research Center, 10
Child Care Center, 3
Circuits, *see* School of Engineering and Applied Science, 130
Civil Engineering, *see* School of Engineering and Applied Science, 130
Classics, 33, 34, 37, 40, 102
Commencement, 29
Committees,
  Doctoral, 35
  Master's, 32
Communication Systems, *see* School of Engineering and Applied Science, 130
Comparative Literature (Interdepartmental), 33, 34, 37, 39, 40, 105
Complaints, Graduate Student, 30
Comprehensive Examination, 24, 32
Computer Science, *see* School of Engineering and Applied Science, 130
Computer Services, 8
Concurrent Degree Programs, 17, 38-39
Confidentiality of Student Records, 30
Control Systems, *see* School of Engineering and Applied Science, 130
Courses, 20, 22, 31, 44
Credentials, Public School, 14
Credit by Examination, 23
Credit, Transfer of, 31
Crump Institute for Medical Engineering, 11
Cultural Opportunities, 2

Dance, 33, 40, 109
Defense Language Institute — Presidio of Monterey, 14
Degree Programs Offered, 33, 34, 37, 38, 39, 40, 44
Dental Research Institute, 11
Dentistry, School of, 14, 18, 27, 39, 40, 110; *see also* Oral Biology, 243
Departmental Scholar Program, 14
Diplomas, 29, 30
Disclosure of Information from Student Records, 30
Disqualification and Appeals, 21
Dissertation, 36
Doctoral Committee, 35
Doctoral Degrees, 34-38
Duplication of Degrees, 16
Dynamics, *see* School of Engineering and Applied Science, 130

Earth and Space Sciences, 41, 111
Earthquake Engineering, *see* School of Engineering and Applied Science, 130
Economics, 33, 34, 37, 41, 117
Education Abroad Program, 14
Education, 14, 33, 37, 38, 39, 41, 120
Electrical Engineering, *see* School of Engineering and Applied Science, 130
Electromagnetics, *see* School of Engineering and Applied Science, 130
Employment, 6, 18-19, 24
Engineer (Engr.) Degree, 135
Engineering Certificate Program, 14, 135
Engineering and Applied Science, School of, 14, 33, 37, 39, 41, 130
Engineering Systems, *see* School of Engineering and Applied Science, 130
English, 33, 34, 37, 41, 146
English as a Second Language, 14, 33, 41, 150
English as a Second Language Placement Examination (ESLPE), 16
Enrollment, 23-24
Environmental Science and Engineering (Interdepartmental), 38, 39, 41, 153
Escort Service, Campus Police, 4
Examinations,
  Credit by, 23
  Doctoral, 34-36
  Foreign Language, 32, 34, 40-43
  Master's, 32
Experimental Pathology, *see* Pathology, 248
Extension Courses, 32

Facilities, Research, 9-13
Facilities, Special, 8-9
Family Day Care, 3
Fees, 24, 25, 28, 29
Fellowships, 18-19, 24
Fernald Clinic and Laboratory, 272
Fields of Study, 33-34, 37-39
Filing Fee, 24, 28-29
Film Archives, 8
Final Oral Examination, 36
Financial Assistance, 18-20
Fluid Mechanics, *see* School of Engineering and Applied Science, 130
Folklore and Mythology (Interdepartmental), 33, 37, 39, 41, 155
Folklore and Mythology, Center for the Study of Comparative, 10
Food Service, 4
Foreign Language Requirements, 38, 40-43
  Departmental, 40-43
  Doctoral, 34
  Master's, 32
Foreign Language Training, Defense Language Institute — Presidio of Monterey, 14
Foreign Students,
  Admission, 16
  Certificate of Resident Study, 30
  English Examination, 16
  Leaves of Absence, 30
  Office of International Students and Scholars, 6
Frederick S. Wight Art Gallery, 7
French, 33, 34, 37, 41, 157
Full-Time Graduate Program, 24

Geochemistry, 33, 34, 37; *see* Earth and Space Sciences, 41, 111
Geography, 33, 34, 37, 41, 160
Geology, 33, 34, 37; *see* Earth and Space Sciences, 41, 111
Geophysics and Planetary Physics, Institute of, 11, 163
Geophysics and Space Physics, 33, 37; *see* Earth and Space Sciences, 41, 111
Germanic Languages, 33, 34, 37, 41, 164

Grades, 21-22, 29
Correction of, 22
Deferred Report (DR), 22
General, 21
Incomplete, 21
In Progress, 21
Repetition of Courses, 22
Satisfactory/Unsatisfactory, 21, 22
Scholarship, Probation, 20
Scholarship, Standard of, 20
Student Record, Unofficial Copy, 29
Graduate Affirmative Affairs Office, 19
Graduate Council, 1
Graduate Cross-Enrollment Program, 14
Graduate Division, 1
Graduate Opportunity Fellowship Program, 19
Graduate Record Examination, 16
Graduate Student Complaints, 30
Graduate Students Association, 2
Graduation, 30
Grants, 18-20, 36
Graphic Services, 5
Greek, 33; *see also* Classics, 40, 102
Grunwald Center for the Graphic Arts, 7
Guidance Committee, 35
Gustave E. von Grunebaum Center for Near Eastern Studies, 11

Health Evaluation, 25
Health Service, 5-6
Health Service Fee, 29
Heat and Mass Transfer, *see* School of Engineering and Applied Science, 130
Hispanic Languages and Literatures, 34, 37; *see also* Spanish and Portuguese, 43, 309
History, 33, 34, 37, 39, 41, 169
History of Graduate Study at UCLA, 1
Housing, 2-3

Identification Card, 24
In Absentia Registration, 25
In-Candidacy Fee Offset Grant Program, 18, 36-37
Incomplete Grades, 21, 22
Individual Ph.D. Program, 37
Individual Study or Research, 20
Indo-European Studies (Interdepartmental), 34, 37, 39, 41, 175
Industrial Relations, Institute of, 11
Institute of American Cultures, 9
Institute of Social Science Research, 13
Intercampus Exchange Program, 14
Interdepartmental Degree Programs, 35, 39
Interdisciplinary Colloquia, 176
Intermediate Degree, *see* Candidate in Philosophy, 33
International Students and Scholars, Office of, 6
Introduction, 1
Islamic Studies (Interdepartmental), 34, 37, 39, 41, 177
Italian, 33, 34, 37, 41, 179

Jacob Marshak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences, 177
Jerry Lewis Neuromuscular Research Center, 11
Joint Ph.D. Degree Program in Special Education, 38
Jules Stein Eye Institute, 11

Kinesiology, 33, 37, 42, 182

Laboratory Animal Medicine, Division of, 9
Languages, *see* Language Requirements, 32, 34, 38, 40-43
Lapse of Status, 28
Late Payment, 28
Late Registration, 28
Latin, 33, 40, *see also* Classics, 102
Latin American Center, 11
Latin American Studies (Interdepartmental), 33, 42, 185
Law, School of, 189
Leaves of Absence, 29
Letters of Recommendation, 16
Library and Information Science, Certificate Program, 14
Library and Information Science, Graduate School of, 33, 37, 39, 42, 190
Library, The University, 7
Linguistics, 33, 34, 37, 42, 196
List of Fees, 28
Living Accommodations, 2-3
Loans, 19, 20
Luso-Brazilian Languages and Literature, 33; *see also* Spanish and Portuguese, 43, 309

Major, Change of, 29
Major Fields, 33, 34, 37, 39, 40-43
Management, Graduate School of, 33, 34, 37, 39, 42, 200
Manufacturing Engineering, *see* School of Engineering and Applied Science, 130
Master's Committees, 32
Master's Degree, 31-33
Materials Science and Engineering, *see* School of Engineering and Applied Science, 130
Mathematics, 33, 34, 37, 42, 215
Mechanical Engineering, *see* School of Engineering and Applied Science, 130
Mechanics and Structures, *see* School of Engineering and Applied Science, 130
Medical History, *see* Anatomy, 49
Medical Physics, 33, 37, *see also* Radiological Sciences, 43, 291
Medicine, School of, 14, 18, 27, 39, 220
Medieval and Renaissance Studies, Center for, 12
Medieval Scandinavian and Old Norse, *see* Germanic Languages, 164
Meeting Rooms and Lounges, 5
Mental Retardation Research Center, 12
Metallurgy and Metal Processing, *see* School of Engineering and Applied Science, 130
Meteorology, *see* Atmospheric Sciences, 66
Microbiology, 33, 37, 42, 220
Microbiology and Immunology, 33, 38, 42, 223
Mildred E. Mathias Botanical Gardens, 8
Molecular Biology (Interdepartmental), 38, 39, 42, 226
Molecular Biology Institute, 12
Money Orders, 5
Museum of Cultural History, 8
Museums, 7-8
Music, 33, 34, 38, 42, 227

Name, Change of, 25
National Center for Intermedia Transport Research (NCITR), 12
National Land and Water Reserves System, 9
Near Eastern Languages and Cultures, 33, 34, 38, 42, 233
Neuropsychiatric Institute, 12
Neuroscience (Interdepartmental), 38, 39, 42, 237
Nondiscrimination, 18
Nonresident Tuition Fee, 25-27
Normal Progress, 24
Nurse Anesthesia, 33; *see* Anesthesiology, 40, 52
Nursery School, University Parents' Cooperative, 3
Nursing, School of, 33, 42, 238

Office of International Students and Scholars, 6
Office of Residential Life, 2
Old Norse and Medieval Scandinavian, *see* Germanic Languages, 164
Ombudsman, 30
Operations Research, *see* School of Engineering and Applied Science, 130
Oral Biology, 33, 39, 40, 243
Oral Qualifying Examination, 34
Organized Research Units, 9
Oriental Languages, 33, 34, 38, 42, 245

Parent Toddler Group, 3
Parking, 4
Pathology, 33, 37, 42, 248
Performing Arts, 2
Petitions, 29
Pharmacology, 33, 38, 42, 249
Philosophy, 33, 34, 38, 42, 251
Physics, 33, 38, 42, 254
Physiology, 33, 38, 42, 257
Placement and Career Planning Center, 6
Police Escort Service, 4
Political Science, 33, 34, 38, 42, 260
Postdoctoral Scholars, 15
Postgraduate Dental Study, Certificate Programs, 14
Postgraduate Medical Study, Certificate Programs, 14
Post Office Boxes, 5
Preventive Medicine and Public Health, 33; *see also* Public Health, 43, 275
Probation, Scholarship, 20
Professional Degrees, 33, 38
Program,
Doctoral, 34
Enrollment, 23
Full-Time, 24
Master's, 31
Psychiatry and Biobehavioral Sciences, 42, 264
Psychological and Counseling Service, 6
Psychology, 33, 34, 38, 43, 270
Psychology Clinic, 272
Public Health, 33, 38, 39, 43, 275
Public School Credentials, 14

Qualifying Examinations, Written and Oral, 34
Quantum Electronics, *see* School of Engineering and Applied Science, 130

Radio Archives, 8
Radiological Sciences, 33, 37, 43, 291
Readmission, 17
Recreation, 2
Refunds, 27
Registration, 23-24, 25, 27-28
Repetition of Courses, 22
Requirements for Degrees,
Doctoral, 34-38
Master's, 31-33
Research Assistants, 18, 24

Research Facilities, 9-13
Residence, Academic,
Doctoral, 34
Master's, 32
Summer Sessions, 22
Residence, Legal, 25-27
Romance Linguistics and Literature, 33, 34, 38, 39, 43, 293
Russian and East European Studies, Center for, 13

Satisfactory/Unsatisfactory Grading, 21, 22
Scandinavian, 33; *see also* Germanic Languages, 41, 164
Scholarship,
Probation, 20
Standard of, 20, 31, 34
Slavic Languages and Literatures, 33, 34, 38, 43, 296
Social Science Research, Institute for, 13
Social Welfare, School of, 33, 38, 43, 300
Sociology, 33, 34, 38, 43, 304
Soil Mechanics, *see* School of Engineering and Applied Science, 130
Solid State Electronics, *see* School of Engineering and Applied Science, 130
Spanish and Portuguese, 33, 37, 43, 309
Spanish Speaking Mental Health Research Center, 272
Special Education, *see* Graduate School of Education, 120
Special Facilities, 8
Special Services and Veterans Affairs, 6
Structures, *see* School of Engineering and Applied Science, 130
Student Health Service, 5-6, 25, 29
Student Photo I.D., 24
Student Records, Disclosure of, 30
Students' Store, 5
Study List, Change of, 23
Summer Sessions, 17, 22
Sunset Canyon Recreation Center, 2
Supplementation Policy, 19
Survey Research Center, 13
System Science, *see* School of Engineering and Applied Science, 130

Teaching Assistants, 18, 24
Teaching Credentials, 14
Teaching of English as a Second Language, 14, 33, 41, 150
Television Archives, 8
Theater Arts, 33, 34, 38, 43, 314
Thesis, 32
Third Party Fee Payment, 28
Transcripts of Record, 29
Transfer of Credit, 31
Transportation, 4
Travel Service, 5
Tuition, Nonresident, 25

UCLA, History of, 1
Unit Value, 32
University Extension Credit, 32
University Minimum Standards, 31, 34
University Parents Cooperative Nursery School, 3
Urban Design, *see* Graduate School of Architecture and Urban Planning, 65
Urban Planning, *see* Graduate School of Architecture and Urban Planning, 68

Verification of Progress and Completion, 30
Veterans Affairs, 6
Visiting Scholars, 15
Visitors Center, 5

Water Resources System Engineering, *see* School of Engineering and Applied Science, 130
Western Management Science Institute, 13
White Mountain Research Station, 13
Withdrawal, 27
Written Qualifying Examination, 34

Zoological Collections, 9

