UCI 1971-1972 General Catalogue

University of California, Irvine

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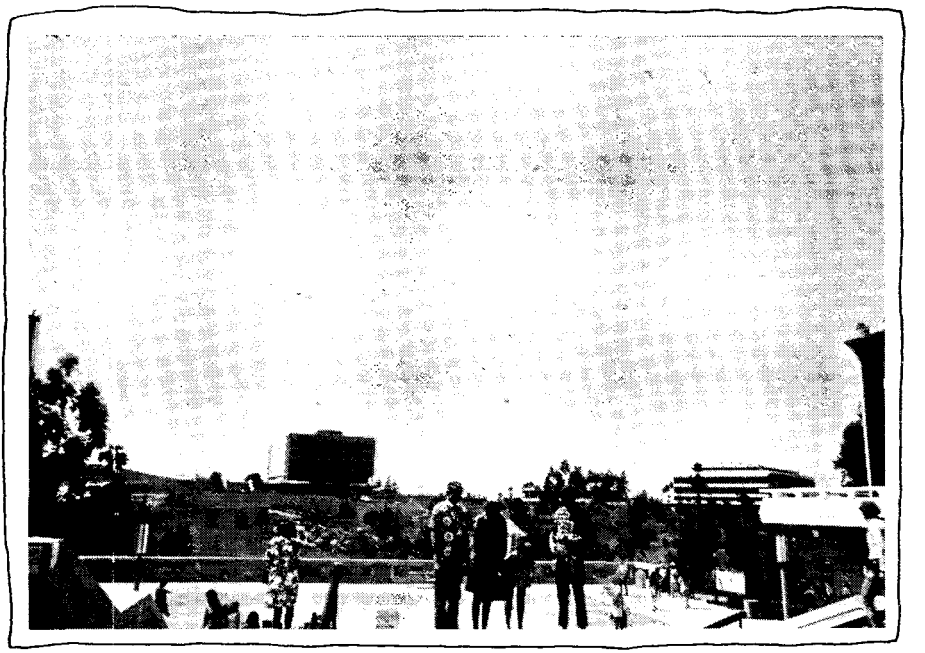
University of Californ

1971-1972

UC IRVINE - 1971-1972

U.C.I General Catalogue



Fred and I and Betty + Will at Irvine

You start thinking about education and you end up thinking about life. There is no borderline between the two: to live is to learn, to learn is to live. The university, central to the formal learning process, must teach us to look at life, listen to life, touch, taste, and smell life.

This catalogue's informal design reflects the evolutionary nature of our lives and institutions. All the paper is 100% recycled. And the book's simplicity saved the taxpayers of California 15% over the past edition, even though the number of pages increased by 10%

The vulnerability of the university in today's society is only one of many examples of man's vulnerability to man. We must acknowledge vulnerability with out rejecting our humanity. We must learn to love to live and learn to live to love.

University of California, Irvine
Volume 5, number 3; July 1971

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Introduction

This catalogue contains general administrative and academic information as well as specific descriptions of schools and departments and the courses offered in each. The first chapter contains information about the University and the Irvine campus in particular. The second chapter, Academic Plan, contains specific details about the academic structure of UCI, obtaining a degree, choosing a major, academic advising, and miscellaneous pre-professional and educational programs. The next two chapters cover Student Affairs and Admissions and Enrollment, including procedures and regulations.

The major part of the catalogue contains information describing the various schools, departments within the schools, Interschool Curricula, University Studies, and Graduate Education, as well as the programs of study and courses offered in each.

Because this catalogue must be prepared well in advance of the year it covers, changes in some programs will inevitably occur. The quarterly "Schedule of Courses" is the final authority in regard to classes offered and instructors; this publication is available from the Registrar's Office shortly before enrollment begins each quarter.

Course Listings: It is particularly important to note that some courses listed are not necessarily offered each year. Admission to UCI does not guarantee admission to any particular course.

The letters F, W, or S after the course number and title indicate which quarter(s) the course will be offered: fall, winter, or spring. (Although this catalogue is not intended to include Summer Session courses, a few are listed which complement particular programs; these are indicated by the word "summer.")

The "(1)" or "(1-1-1)" designation following the course title indicates the course credit toward the 45 courses needed to graduate. Each "1" represents one quarter course. Courses that may be repeated for credit contain wording to that effect in the descriptive writeup.

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Fall Quarter 1971

Registration and Enrollment (new and returning)	Sept. 27-29
Orientation for New Students	Sept 27 - Oct. 1
Late Registration and Enrollment	Sept. 27-29
Instruction Begins	Oct. 4
Last Day for Late Registration	Oct. 11
Last Day to Add a Course	Oct. 14
Last Day to Change Pass/Not Pass Option	Oct. 14
Last Day to Drop a Course	Nov. 11
Thanksgiving Holiday	Nov. 25-26
Instruction Ends	Dec. 11
Final Examinations	Dec. 13-18
Quarter Ends	Dec. 18
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Late Registration and Enrollment	Jan. 4-5
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Last Day to Add a Course	Jan. 18
Last Day to Change Pass/Not Pass Option	Jan. 18
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Last Day to Drop a Course	Feb. 15
Instruction Ends	March 11
Final Examinations	March 13-18
Quarter Ends	March 18
Spring Holiday	March 24

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Registration and Enrollment	Feb. 29-March 10
Late Registration and Enrollment	March 27-28
Instruction Begins	March 30
Last Day for Late Registration	April 10
Last Day to Add a Course	April 11
Last Day to Change Pass/Not Pass Option	April 11
Last Day to Drop a Course	May 9
Memorial Day Holiday	May 29
Instruction Ends	June 3
Final Examinations	June 5-10
Commencement	June 10
Quarter Ends	June 13

The University

Fred took this picture of Vice Chancellor Russell shaking hands with me.

Mr. Smith the librarian, showing Betty the card catalogue

University of California

The promise of a University of California is contained in the State's Constitution, drafted in Monterey in the gold rush year of 1849. California was admitted to the Union the following year, but almost twenty years were to pass before the hope for a public university was realized.

Impetus for the building of a university came from private citizens and the federal government as well as from the State. A forerunner of the University of California was the Contra Costa Academy, established in 1853 in downtown Oakland by a group of churchmen led by the Reverend Henry Durant. In 1855 this institution was incorporated as the College of California, and plans were made to purchase a new site north of Oakland.

In 1853 Congress bestowed upon the State 46,000 acres of public lands with the stipulation that proceeds of the sale of the land were to be used for a "seminary of learning." The Morrill Act of 1862 gave another grant of public lands to the State for the establishment of a college to teach agriculture and the mechanic arts.

The College of California offered its buildings and lands to the State in 1867 on condition that a "complete university" be created to teach the humanities as well as agriculture, mining, and mechanics. The legislature accepted, and on March 23, 1868—Charter Day—Governor H. H. Haight signed the act that created the University of California.

From its beginning in Berkeley, the University of California has grown to total nine campuses: Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz. The University also maintains research stations, field stations, and Extension centers in more than 80 locations throughout California.

The University operates major research installations at Mount Hamilton (the Lick Observatory), White Mountain (high altitude research), Hat Creek (radio astronomy research), Bodega Bay (marine laboratory), Oakland (Naval Biological Laboratory), and Richmond (engineering and forest products research). Among nearly two dozen other principal field and research stations are the Antelope Valley Field Station, Los Angeles County; Blodgett Forest, El Dorado County; Philip Boyd Desert Research Center, Riverside County; Deciduous Fruit Field Station, Santa Clara County; Frances Simes Hastings Natural History Reservation, Monterey County; Hopland Field Station, Mendocino County; and Kearney Horticultural Field Station, Fresno County. Under contract with the Atomic Energy Commission, the University provides administrative services for two off-campus installations for atomic research: a component of the Lawrence Radiation Laboratory at Livermore and the Los Alamos Scientific Laboratory at Los Alámos, New Mexico.

Located in San Francisco are the affiliated Hastings College of the Law and the San Francisco Art Institute. The California College of Medicine in Los Angeles became part of the University in 1965 and is now located on the Irvine campus.

Student enrollment has reached 110,000. Of this number, about 90% are residents of California, while the remainder come from other states of the nation and from about 100 foreign countries.

The University of California leads all institutions in the world in the number of Nobel Laureates on its faculty. It also has more members of the National Academy of Sciences than any other University and more than 500 recipients of Guggenheim Fellowship Awards. Its library is ranked with the best in the nation in quality and in the size of its collections.

The University performs many services in addition to its campus programs of instruction. It is the primary state-supported academic agency for research. Public services include medical and dental clinics, information services for agriculture, and a broad program of continuing education for adults in the arts, business, and the professions.

University Administration

The "full powers of organization and government" of the University are entrusted by the State Constitution to the twenty-four member Board of Regents. Sixteen members are appointed to sixteen-year terms by the Governor; eight are members ex officio. The Regents Designate are alumni who will succeed to an ex officio position on the Board of Regents upon assuming the office of President of the Alumni Association of the University of California. Most of the appointed Regents also serve as trustees, consultants, directors, or advisors to other educational or cultural institutions, or to business organizations, and several of them hold UC degrees. All of the Regents are involved in public service or civic activities in addition to their service to the University of California.

The President is the executive head of the total University, appointed by and responsible to The Regents, with full authority and responsibility over the administration of all affairs and operations. Each campus is administered by a Chancellor responsible for its operation. In determining the University's educational and research policies, the President consults with the Chancellors and with the Academic Senate, which is composed of the faculty and certain administrative officers. The Academic Senate authorizes all courses of instruction in the academic and professional schools and colleges. Processes for student participation in policy-making exist at several administrative levels.

Relations with Schools

The University Office of Relations with Schools serves as a liaison between the University of California and the other educational systems of the state. On the one hand, it is the spokesman for the University insofar as its educational policies affect the high schools and junior colleges from whence its students come. On the other hand, it interprets to the University current developments on other educational levels whose impact is felt through entering students. Schools or organizations seeking such educational services are welcome to make arrangements through this office. The staff is also available as a resource to schools and education-oriented groups.

The Irvine Campus

The history of the Irvine campus began when The Board of Regents concluded from enrollment and population projections that a new campus of the University of California was needed and that it should be in the Orange County area. A gift of 1,000 acres of Irvine Ranch land was accepted by The Regents in 1961, and early in 1964 The Regents purchased an additional 510 acres from The Irvine Company in order to provide for future campus housing and ancillary services. Ground was broken for the first permanent buildings in October 1963. In early 1970 the University acquired the adjacent San Joaquin Fresh Water Marsh, a 200-acre remainder of once vast marsh lands; it is being maintained by UCI as a wildlife preserve and natural laboratory.

Classes opened in October 1965 with 1,589 students, freshmen through post-doctoral. It had been decided that faculty would be recruited to teach at all levels and that both beginning and transfer students would be admitted the first year. In the fall of 1970, 6,396 students were enrolled: 5,078 undergraduates, 738 graduates, and 580 students, interns, and residents in the UCI-California College of Medicine. Enrollment is projected to an eventual student population of 27,500.

The total Irvine campus was planned before the first building was begun. Physical planning and academic planning were undertaken together. Overall planning of the campus and the community together was possible because of single ownership of the surrounding land. The campus is being integrated with a master-planned community, which is at the heart of a rapidly-developing metropolitan area with an estimated two million population within a 20-mile radius that includes parts of southern Los Angeles County, northern San Diego County, and Orange County. The campus is about three miles from the city of Newport Beach and is connected by a modern freeway system to the city of Los Angeles, about 40 miles to the north.

Bus service to UCI is very limited; students who plan to live off campus should plan accordingly. Student parking permits are valid for parking lots located on the perimeter of the campus. A restaurant, cafeteria, snack bars, and vending machines provide food service on campus.

Currently, much of the area around the campus is still used for grazing cattle. The preliminary town center consists of a single building which contains general services (a bank, music store, malt shop, beer garden, cleaners, market, travel bureau, post office, book store, and an interfaith center). Sections of low-density housing which, together with parks, will occupy the area, have been developed in the distance. For several years, however, a good deal of the surrounding area will be open.

The campus itself is planned in such a way that it will permanently retain an open feeling. The buildings will radiate outward from a central park and will

be in a series of concentric circles. The inner circle is now completed. The open spaces on the campus are considered an important part of the design.

Irvine is set in the rolling rangelands of the San Joaquin Hills, only a few miles from the Pacific ocean. Beaches about three miles to the west are lined by communities and State Park recreation areas. Two mountain ranges and popular desert resort spas are within a two-hour drive. The climate is usually warm and dry; there is frequently a breeze from the ocean and occasional fog and rain.

For further information about the Irvine campus contact the University Relations Office, which is responsible for public information, publications, University and community relations, gifts and endowments, alumni relations, public ceremonies, campus tours, the Speakers Bureau, and liaison with support organizations: The Friends of UCI, Friends of the UCI Library, University Gallery Associates, UCI Town and Gown, Big I Boosters, the UCI Foundation, Oceanology Associates, Public Relations Advisory Council, UCI Industrial Associates, the UCI Alumni Association, the UCI Parents Organization, the Associated Alumni of the UCI-California College of Medicine, and the UCI Medical Faculty Wives.

Activities and Recreation

The Associated Students of the University of California, Irvine (ASUCI) was organized by and for the Irvine campus student body to give focus to student participation and activities. From the activities fee which the student body voted to levy against itself, the ASUCI organizes lectures, concerts, community projects, and many other activities administered by elected student representatives.

Academic departments often bring guest lecturers of general interest to the campus. The School of Fine Arts, which also administers the Committee for Arts and Lectures, frequently offers presentations in art, dance, concert, film, and repertory theatre.

Recreational facilities on campus include a swimming pool, tennis courts, handball courts, basketball courts, a baseball stadium, a track, and expansive playing fields. A comprehensive intramural sports program has been developed for students, faculty, and staff.

Intercollegiate Athletics

UCI competes in intercollegiate athletics as an independent institution in the college division of the National Collegiate Athletic Association (NCAA). Irvine fields teams in ten sports: baseball, basketball, crew, cross country, golf, sailing, swimming, tennis, track, and water polo. The water polo team won the NCAA Championship last year beating UCLA in the finals. The UCI swimming squad won NCAA National Championships in 1969, 1970, and 1971. The tennis team won the NCAA national title in 1970 and 1971. Basketball has competed in two regional playoffs, and baseball advanced to the NCAA Regionals in its first year. Irvine's crew and sailing teams consistently rank high in intercollegiate competition on the West Coast, and the golf program has always been successful. All-American honors have been awarded to over 40 UCI athletes.

Instructional and Research Facilities

University Library

The University Library is a rapidly growing and increasingly important resource for teaching and research with a collection of more than 450,000 volumes and a current subscription list of more than 7,000 journals and serials. The collection is housed in a functional building designed to bring students and books together. With the exception of materials housed in the Department of Special Collections and reserve books in heavy demand, all periodicals and books are on open shelves and are easily accessible to all readers. Reference books, numbering about 10,000 volumes, including bibliographies, encyclopedias, handbooks, dictionaries, and indexes, are arranged in an open shelf collection. There are librarians in the Reference Department to assist in finding information and in using the reference tools. Informal instruction in the use of the collections is available at any of the public service desks. A magnetic tape cassette player containing a twelve minute self-guided tour of the library may be borrowed at the Circulation Desk.

All aspects of the library building are designed to encourage independent study and research and to stimulate general exploration and browsing among the collections. When the University is in session, the library is open 97 hours per week.

Special facilities and staff are provided for the Government Publications Department, which contains a collection of over 95,000 documents issued by the federal government, state, local, and foreign governments, and international organizations. The library is a depository of U.S. and California publications.

The library's Department of Special Collections houses a collection of rare books, local history materials, and the official university archives.

The library copying service, supplemented by coin-operated copying machines, makes it possible to obtain reproduction service at all times. Microtext materials and various types of reading equipment are brought together in special facilities. Other special facilities include group study rooms, a piano room for reviewing musical scores housed in the library's stacks, a map collection, and a room containing special facilities for blind and partially-sighted students.

A medical collection of over 60,000 volumes is available in Medical Surge Building II.

Two branch libraries, the Physical Sciences Library and the Biological Sciences Library, are located in the Physical Sciences Building and in the Science Lecture Hall. More than 900 current periodical titles are held in each library. Hours of service are the same as the General Library, and copying service is furnished in both branches. In addition, a combined library for the Museum of Systematic Biology and the Center for Pathobiology is located in the Center for Pathobiology in Steinhaus Hall.

Bus service to UCLA is offered, Monday through Saturday, for students who need material not held in the UCI Library. Interlibrary loan service is available to the faculty and graduate students.

A lively program directed toward the computerization of library operations is being developed by the Library Systems Analysis Office.

For a more comprehensive description of library services and procedures consult the Library Handbook, copies of which may be obtained at the Circulation Desk.

Center for Pathobiology

The Center for Pathobiology is an organized research unit established within the School of Biological Sciences to enhance the teaching programs and the research activities of its twenty-five participating research workers, including faculty members, undergraduate and graduate students, and postdoctoral scientists. The Center provides a focus for many activities in the School of Biological Sciences: notably, developmental biology, pathobiology, and environmental biology as it relates to pest control and pollution. Development of totally new strategies for controlling insect pests with insect growth regulators and by genetic techniques is one of its primary goals. Another major goal is the analysis of normal and pathological development of insects and other invertebrates by genetic and biochemical techniques. In its role as an informational and research unit, the Center maintains two comprehensive and current reprint collections— an invertebrate pathology collection and an insect development and genetic collection—which are accessible to workers throughout the world. Center publications include bibliographies and research reports.

Computing Facilities

Computing services are provided by three functionally specialized facilities—the Batch Computing Facility, the Interactive Computing Facility, and the Real Time Computing Facility.

While substantial computing services are available for research activities and for systems development and operation by the registrar's office and the library, the major distinguishing feature of computing at Irvine is the extensive use of computing in instructional activity. For several years, at least 10% of the total student body has enrolled in the introductory programming course, and over one-third of the students use computing for instructional purposes every year. A second distinctive feature of computing at Irvine is the availability of about 100 ports for interactive access to the computing facilities.

Inquiries about computing services should be made to Julian Feldman, Assistant Chancellor for Computing; Paul Condon, Director of the Batch Computing Facility; William Newman, Director of the Real Time Facility; or David Sheldon, Director of the Interactive Computing Facility.

The Irvine Arboretum

The Irvine Arboretum is administered by the School of Biological Sciences. Plans for this botanic garden facility envisage the treatment of the whole campus under scientific management. Records will be kept of the location of all material planted on the campus, and particular areas will be reserved for experimental and teaching purposes. A number of plant houses and other controlled environment facilities will be constructed; several are already in operation.

Museum of Systematic Biology

The Museum of Systematic Biology, administered by the School of Biological Sciences and under the direct supervision of the Department of Population and Environmental Biology, is a teaching and research facility for the campus. It was opened in March 1966, and presently contains material on local populations of fishes, plants, insects, and mammals. Several important collections, notably the Sprague conchological collection, are housed in the Museum.

Public Policy Research Organization

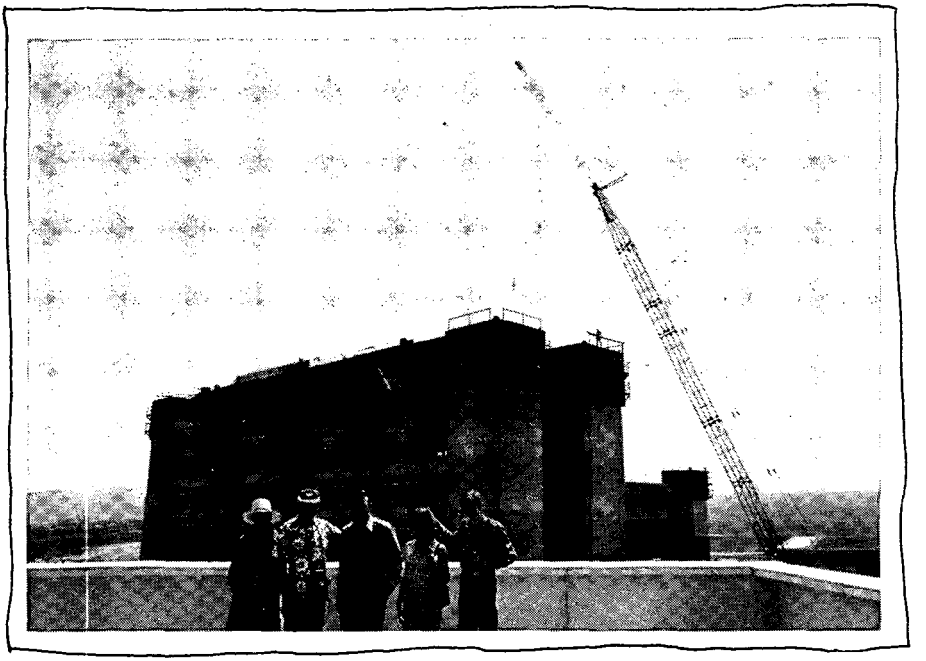
The Public Policy Research Organization was established in 1966 by The Regents of the University to conduct policy-oriented research as a University institution with headquarters on the Irvine campus. It will sponsor research at all the University campuses to complement the work of its own research staff.

The basic objectives of "PPRO" are to initiate and conduct interdisciplinary research programs relevant to current and future public problems, to carry out such research projects for government agencies as will enhance its basic research program, and to participate in the development of training programs in the field of policy research and analysis. Its fundamental research programs will be generally related to focusing diffuse and fragmented authority on specific problems that cut across the authorities of public agencies, and will emphasize application of systems analysis and organization theory.

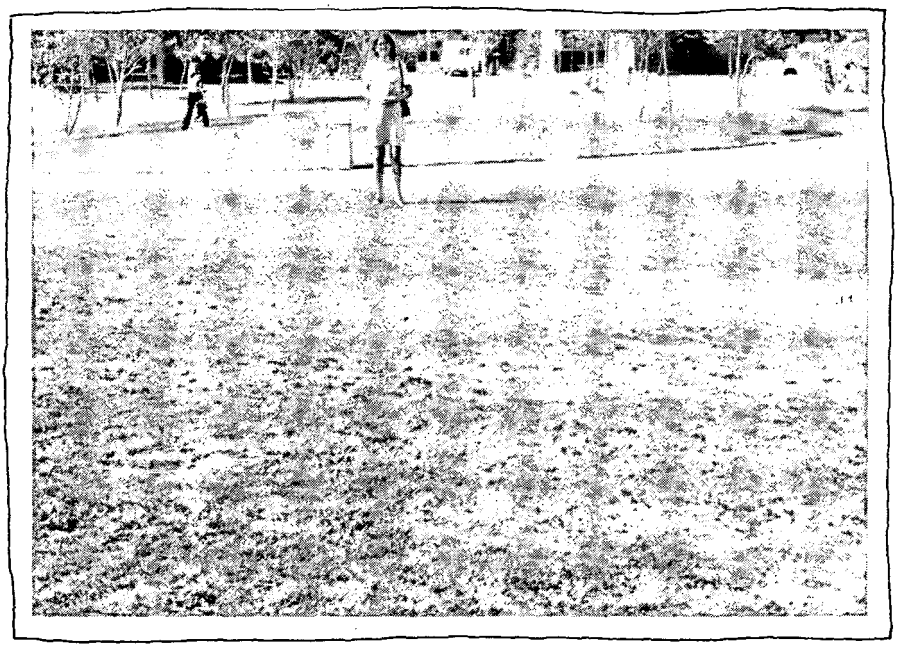
Current interests of PPRO are: (1) effectiveness of the administration of institutions of higher education, (2) development of the San Joaquin Valley as a result of new water and transportation resources, (3) improvement of the education of Mexican-American children in the public schools, (4) the use of science at the State level of government, (5) conservation of natural resources and particularly the joint use of forests for both commerce and recreation, (6) novel organizations of pupils and teachers in schools, (7) integration of schools, (8) the quality of personal environment—particularly at home and in places of work, (9) the influence of peers on students' educational achievement.

Graduate assistantships will be available for qualified students, in any school or department of UCI, who desire experience in policy research and analysis.

Academic Plan



This is Mr. Phillips, the acting Dean of Students



Betty

The Academic Plan

The university environment is not as separate from the outside world as it once was, but it is nevertheless a special atmosphere and has special obligations. A university education should provide the student with ways to generalize from it to the changing conditions he will find, or will create for himself, upon graduation. It should in this sense be of lasting value. But a basis for generalization cannot be established through generality itself; nor can all knowledge be collected neatly into units for installation into the student's head. A university education must therefore consist of relatively specific studies, even though these may be distributed among a number of fields and may often be interdisciplinary in nature. Above all, the student's collective university experience should give him a particular set of insights which will become the basis for his intellectual identity.

The faculty of the University of California, Irvine believes that education is a continuing process, not the simple sum of any particular number of years of formal work, and that a university does not fulfill its purpose unless the student learns how to learn. The faculty recognizes that helping students to learn cannot be accomplished unless the student understands that the primary responsibility for learning is his own.

Important to Irvine's overall academic concept is recognition that a university provides an environment for learning which goes beyond the regular work of formal courses. Much depends upon a student's own initiative—on how fully he takes advantage of opportunities which come to him through suggestions for further study, through informal connections with faculty and other students, and through all the accidents of association to be found in academic life. It follows also that academic progress should be thought of not merely in terms of courses taken, but in terms of the acquisition of academic competence and the growth of intellectual integrity and creative power.

The faculty has indicated that it envisages many possible avenues by which the student may attain the Bachelor's Degree. It has therefore adopted the principle that courses should be used as flexibly as possible and that credit toward graduation can be obtained not only through formal courses but also by examination and through various means of individual and independent study.

A student's academic program will naturally include specific course work and a major emphasis of some kind, but no program at UCI is designed to create narrow technical competency. In its advisory capacity the faculty will encourage each student to plan a coherent program stressing his individual needs.

Academic Structure

The Irvine campus offers educational programs ranging from freshman to postdoctoral levels. Its academic structure was created with the intention of providing the stability of major intellectual disciplines while at the same time

encouraging interdisciplinary approaches, both within these disciplines and between or among them. The academic units are not grouped under colleges in the conventional sense (for example, there is no distinct "College of Arts" or "College of Sciences"), and continuing efforts are made to ensure flexibility among programs.

Central to this academic structure are the five basic schools: Biological Sciences, Fine Arts, Humanities, Physical Sciences, and Social Sciences. Each school is headed by its own dean, and four of the five contain departments, each having its own chairman. All of the schools stress interdisciplinary work in one way or another. The School of Social Sciences has no departments, and the departments which comprise the School of Biological Sciences are not of the traditional kind.

In order to provide for interdisciplinary programs in areas of study which overlap two or more of the major academic units, the academic structure includes the Council for Interschool Curricula. Comparative Culture (which involves American studies and ethnic studies), Social Ecology, and Information and Computer Science are units within the Council. These are regular degree programs. Like all other programs on the campus, however, they accept students whose areas of concentration are in some other field.

Professional schools on the campus include the School of Engineering, which offers upper-division and graduate degree programs with an emphasis on electrical engineering and civil and environmental engineering, and the Graduate School of Administration, which is designed to combine various fields of knowledge in order to deal in new ways with the problems of administration in their many contemporary forms. The UCI-California College of Medicine is also part of the campus.

University Studies, an interdisciplinary program of courses for freshmen, operates independently of the schools and the Council for Interschool Curricula. Programs in Teacher Education and Physical Education are also separate. None of these offers a degree.

Graduate studies at Irvine are administered by the Graduate Division, but all graduate programs and faculty operate within the regular departments. There is no separate graduate faculty. Graduate study, therefore, takes place within the schools and is related to undergraduate work within the departments. Most research on the campus is conducted at the departmental level and thus is also contained within the schools. There are, however, four special research organizations: The Public Policy Research Organization, which has special capabilities for conducting research in the field of public policies; the Center for Pathobiology and the Arboretum, which operate in conjunction with the School of Biological Sciences; and the Museum of Systematic Biology, which is maintained by the School of Biological Sciences as part of its research and instructional program. (See p. 14.)

The Vice Chancellor for Academic Affairs has administrative responsibility for all programs in instruction and research. Matters of educational policy, including approval of programs, courses, and grades, are the responsibility of the Irvine Division of the Academic Senate and its committees. The Irvine Division is part of the Academic Senate of the University of California and includes all faculty members. For further information on the administration of the entire University of California system, see page 10.

Descriptions of the schools, departments, and other programs of study are included in the following pages.

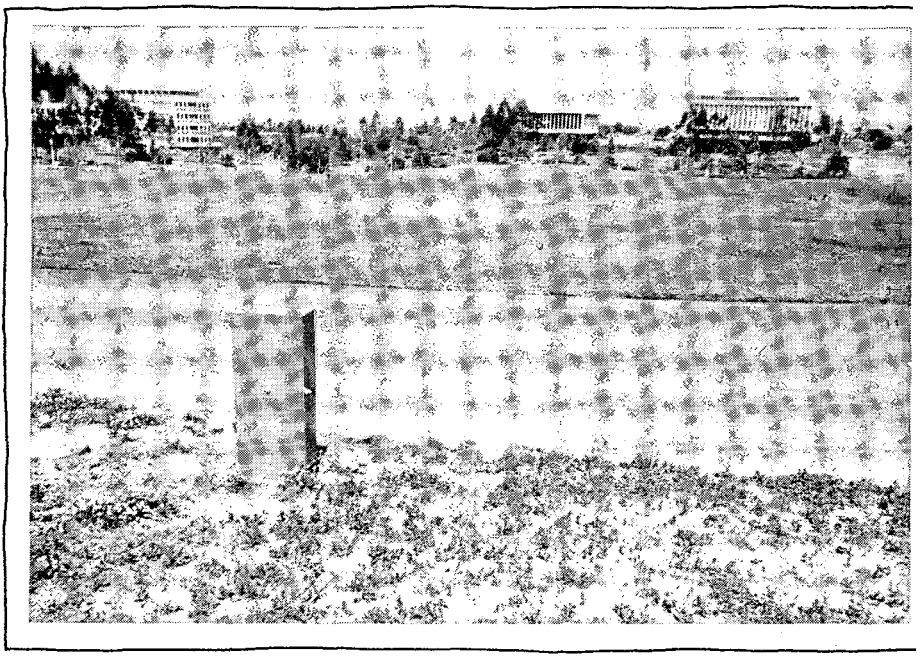
Degrees Offered

Administration	M.A., Ph.D.
American and Comparative Culture	Ph.D.
Art	B.A.
Biological Sciences	B.S., M.S., Ph.D.
With opportunities to specialize in Developmental and Cell Biology, Molecular Biology and Biochemistry, Population and Environmental Biology, and Psychobiology	
Chemistry	B.A., M.A., Ph.D.
Classics	B.A.
Classical Civilization	B.A.
Comparative Culture	B.A.
Comparative Literature	B.A., M.A., Ph.D.
Dance	B.A.
Drama	B.A.
Education—Fifth year credential program only. Secondary-Elementary	
Engineering	B.S., M.S., Ph.D.
English	B.A., M.A., M.F.A., Ph.D.
Fine Arts	M.F.A.
French	B.A., M.A., Ph.D.
German	B.A., M.A.
Greek	B.A.
History	B.A., M.A., Ph.D.
Humanities	B.A.
Information and Computer Science	B.S., Ph.D.
Latin	B.A.
Linguistics	B.A.
Mathematics	B.A., M.A., Ph.D.
Medicine	M.D.
Music	B.A.
Philosophy	B.A., M.A., Ph.D.
Physics	B.A., M.A., Ph.D.
Political Science	Ph.D.
Psychology	Ph.D.
Radiological Sciences	M.S., Ph.D.
Russian	B.A.
Social Ecology	B.A.
Social Sciences	B.A., Ph.D.
Spanish	B.A., M.A., Ph.D.

In order to receive a degree, a student *must* file an Application for Graduation the first quarter of his senior year at his dean's office.

Honors at Graduation

Students may graduate with honors, either *summa cum laude* (the highest honor), *magna cum laude,* or *cum laude.* The criteria used by each school in weighing candidates for these honors are included in each school's section of of the catalogue.



Fred took this picture of me on top of the librar

Requirements for a Bachelor's Degree

University Requirements

UC Requirements

1. English ("Subject A"). Every undergraduate must demonstrate upon entrance to the University an acceptable level of ability in English composition. This requirement may be met *before entrance* by:

   a. Achieving a grade of 5, 4, or 3 in the College Entrance Examination Board (CEEB) Advanced Placement Examination in English, *or*

   b. Achieving a score of 550 or higher in the CEEB Achievement Test in English Composition, which all entering freshmen must take before admission, (only students who have not taken the CEEB test before will be allowed to take the CEEB at the beginning of fall quarter. They should contact the Subject A Office for information before Orientation Week, telephone 833-6717), *or*

   c. Entering the University with credentials showing the completion of an acceptable college-level course in English composition with a grade of C or better.

Satisfaction of the Subject A requirement is determined by the Office of Admissions. Students not meeting the requirement in one of the ways described above must enroll in the non-credit course in Subject A *during their first quarter of residence in the University.* A fee of $45 is charged. Students who fail the Subject A course will be required to retake the course the following quarter and continue retaking it until the requirement is satisfied.

2. American History and Institutions. This requirement may be met by:

   a. Completion in high school of one semester of United States History and one semester of United States Government with grades of C or better.

   b. Passing of an examination in the subject.* *or*

   c. Presentation of a certificate of completion of the requirement at another California institution.

   d. Satisfactory completion of a college level course in United States History and one in United States Government.

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*The American History and Institutions examination, administered by the History Department and the School of Social Sciences, is given twice a year. Students should contact the History Department for further information about the dates, place, and subject matter of the examination.

UCI Requirements

3. Breadth requirement* (the "6-3-3 requirement"). Rather than prescribing specific courses or areas, the faculty simply states that a given portion of a student's course work should be in areas outside his major. This requirement may be met by taking course work in three schools (Schools of Biological Sciences, Fine Arts, Humanities, Physical Sciences, or Social Sciences) outside the school of the student's major, as follows:

   Students must take *six* courses in one school outside his major and *three* courses in each of two other schools outside his major. (A student who completes the interdisciplinary courses University Studies 1, 2, 3 must take *three* courses in each of *three* schools outside the school of his major.)

4. Credit for 45 courses (180 quarter units), earned by examination, by other evaluation, or course work. (A course usually offers four quarter units of credit.)

5. A grade average of at least C.

6. Credit for the last three quarters of work immediately preceding graduation earned in residence on the Irvine campus (i.e., a minimum of one year full-time attendance at UCI). An exception to this rule is allowed in the case of students enrolled in the Education Abroad Program, who may be allowed to complete nine of the last 22 courses, including the final three courses, in residence.

Changes may be made in the UCI breadth requirements too late to be included in the 1971-1972 Catalogue. New students should consult their advisors to determine whether such changes will affect their academic programs.

Proficiency in English and Foreign Languages

Beyond the general English requirement ("Subject A", described on p. 23), there are no general course requirements in English composition for students at UCI. Students who are reasonably competent in the use of English would profit from additional study with the aim of further improving their writing. Students who plan to transfer elsewhere from UCI should take English composition, since formal instruction in this subject is a graduation requirement of most universities.

There are no general requirements in foreign languages for students at UCI (although there are such requirements in some departments; see below), but the ability to read one or more foreign languages is a requirement of most graduate schools. Students who plan to transfer elsewhere from UCI should have studied a foreign language, since knowledge of a foreign language is a requirement for the Bachelor's Degree in many universities, including the other campuses of the University of California.

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* The breadth requirement does not apply to students majoring in the School of Engineering. Courses in the School of Engineering may not be used to satisfy the breadth requirement.

School and Departmental Requirements

The following school and departmental requirements for the Bachelor's Degree are in addition to the University requirements listed above. Some schools do not have school requirements; in these cases, a student majoring in one of these schools simply has to fulfill the University and the departmental requirements. The University, school, and departmental requirements may overlap. That is, courses taken to fulfill a school or departmental requirement (e.g., the physics course requirement in the School of Biological Sciences) may also help fulfill the University breadth requirement (p. 24).

As soon as he has determined the area of his concentration (not later than the beginning of the junior year), the student should enter one of the schools at UCI, having made certain that he has the background and the preparation necessary to accomplish junior and senior work in that school.

Transfer students should assume that equivalent courses taken elsewhere will fulfill the following school and departmental minimum course requirements for graduation (see the section on "Planning for Transfer to UCI," p. 59).

In the following list of course requirements, "lower division" refers to courses numbered 1-99; "upper division" refers to courses numbered 100-199. Courses numbered 200 and above are graduate courses. "Lower division" usually refers to freshman-sophomore courses, "upper division" to junior-senior courses. However, junior and senior students may take lower-division courses, and freshmen and sophomores may take some upper-division courses.

School of Biological Sciences

Biological Sciences Core Curriculum (101A-B-C-D-E-F-G, 102A-B-C-D-E-F); minimum of three satellite courses (see p. 91); certain physical chemistry or selected engineering courses may substitute for the satellites; Chemistry 1A-B-C; Chemistry 51A-B-C; Humanities 1A-B-C (This covers the English requirements for premedical students); Mathematics 2A-B-C; Physics 3A-B-C or 5A-B-C.

School of Fine Arts

No School requirements

Departmental Requirements

Art — Studio Major: One years work in visual fundamentals (30A-B-C); one years survey in history of art (40A-B-C); two courses in modern art to be taken the first year (108, 109, 109N, 129); six upper-division studio courses (145 through 198); two additional upper-division studio or art history and criticism courses (100 through 198); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass).

Art History Major: One years survey in history of art (40A-B-C); nine upper-division courses in art history, with at least one course in each of the following areas: Ancient (100, 100N, 101, 102), Medieval (103, 103N), Renaissance (104, 104N, 105, 105N), Baroque (106, 106N, 107), and Modern (108, 108N, 109, 109N, 110N, 128, 129); two studio art courses; one Special

Studies in History and Criticism of Art in senior year (199); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass).

Dance — (See p. 120 for requirements to enter department as a major.) Performing Major: Four years studio work in ballet (30A-B-C, 35A-B-C, 130A-B-C, 135A-B-C); three years studio work in free-style (40A-B-C, 45A-B-C, and 140 for three quarters); two years studio work in jazz (50A-B-C, 55A-B-C); one years work in theory (20A-B-C); one years work in music for dancers (120A-B-C); one course in dance notation (65A); three courses in history of world dance (110A-B-C); three courses in choreography (155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Teaching, Criticism, or Choreography Major: Three years studio work in ballet (30A-B-C, 35A-B-C, 130A-B-C); two years studio work in free-style (40A-B-C, 45A-B-C); one years studio work in jazz (50A-B-C); one years work in theory (20A-B-C); one years work in music for dancers (120A-B-C); three courses in history of world dance (110A-B-C); three courses in dance notation (65A-B-C); three courses in choreography (155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Drama — One years survey in the development of dramatic literature (40A-B-C); one year in acting (30A-B-C); one year in design literature (140 through 150); six upper-division courses in addition to the two in dramatic literature mentioned above (these may be in studio work and/or in dramatic literature, playwriting, filmwriting, and criticism); three courses in Fine Arts outside the departmental major, including two consecutive quarters (which are equivalent to one course) in dance (these courses may be taken on Pass/Not Pass); participation (acting or technical) in at least one major University Theatre production a year (160).

Music — (See p. 127 for requirements to enter the department as a major.) Two years work in theory (30A-B-C, 130A-B-C); two years work in musicianship (5A-B-C, 15A-B-C; Music 5A-B-C to be taken concurrently with 30A-B-C and Music 15A-B-C to be taken concurrently with 130A-B-C); one years work in history and literature of music to be preceded by 30A-B-C (40A-B-C); one years work in counterpoint (135A-B-C); one years work in form and analysis (155A-B-C); three upper-division courses in history and criticism of music (140 through 145, 152A-B-C); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass); command of piano; participation in the chorus, orchestra, or in chamber music each year; a senior recital; and a senior examination covering an assigned representative repertory drawn from the total history of music.

School of Humanities

(These School requirements apply only to freshmen entering in the fall quarter, 1971, and thereafter.)

Freshmen and sophomores must have written permission of their advisors to enroll and to enter a course in the School. This permission is given only when the advisor is convinced that the student's program is an intelligent one and will prepare him properly for upper-division work.

Humanities 1A-B-C (each equivalent to two courses) in the freshman year if the student has fulfilled the Subject A requirement. If the student has not fulfilled the Subject A requirement, he must take the sequence in the sophomore year. With advisor's consent transfer students may substitute equivalent experience in literature, philosophy, and history in a previous institution for the core course.

Two years of a single foreign language or its equivalent (generally satisfied by 1A-B-C and 2A-B-C or equivalent high school credit) completed as soon as possible.

Departmental Requirements

Classics — The department offers four separate majors:

Greek. Greek 2A-B-C; Greek 10; six courses from Greek 100-199; Classics 151.

Latin. Latin 2A-B-C; Latin 10; six courses from Latin 100-199; Classics 151.

Classics. Greek (or Latin) 2A-B-C; Greek (or Latin) 10; four courses from Greek (or Latin) 100-199; Latin (or Greek) 1A-B-C, 2A-B-C; one course from Latin (or Greek) 100-199.

Classical Civilization. Latin (or Greek) 1A-B-C; Classics 141, 151, 152, 153; Philosophy 120A, 121 (or 122); Art 101, 102; History 110A-B (or 112A-B).

Comparative Literature — Sufficient competence in a foreign language, either modern or classical, to be able to deal with any standard literary or critical text in that language with facility. If the student intends to continue with graduate work, it is highly recommended that he begin the study of a second foreign language before graduation.

A three-quarter lower-division sequence: CL 50A-B-C or English 28A-B-C.

About twelve literature or allied courses in addition, of which ten must be upper division: Normally these will include CL 100, CL 101, either CL 102 or CL 103; suitable upper-division course work in the literature of a foreign language; appropriate study in English and American literature; and further study in literature or allied fields as recommended by the advisor. Passing performance in the Bachelor's Examination.

English — English 28A-B-C; CL 100 twice; CL 101; E 102 or CL 102 twice; four courses above 102, at least two of which must be 103; competence in a foreign language equivalent to six quarters of work at Irvine plus one course in a foreign language where texts are read in the original language. Normally students electing a writing emphasis will take not as many of the period and genre courses but a total of more courses in English than the usual major. All students will be required to pass the Senior Comprehensive Examination.

French — French 10A-B 12A-B-C, and one of the following two groups: (A) Literature: Seven upper-division courses, of which at least five must be in literature. (B) Culture and Civilization: Seven upper- division courses, of which at least four must be in culture and civilization.

German — German 100A-B-C, 101, 102A-B; six courses from German 110-199.

History — History 29A-B-C or 30A-B-C, or, for upper-division transfer students, a year-long survey in history; seven additional upper-division courses, including one in historiography; History 190A-B (Senior Seminar).

Linguistics — (1) Linguistics 50, 101, 102, 103; (2) Four additional upper-division linguistics courses; (3) Three courses beyond 2C in a single foreign language; (4) Three courses of a non-Indo-European language or three courses of Greek or Latin.

Philosophy — Philosophy 50; Philosophy 120A-B-C; two of the following: 100A-B, 110A-B, 115A-B; two additional quarter courses from Philosophy 101-199.

Russian — Russian 10A-B; 11; 101A-B-C; 151A-B-C; 160A-B; 170.

Spanish — Spanish 10A-B, 11, 12A-B-C; 110A or 110B or 110C; Linguistics 50; plus one of the following three groups:

(A) Literature: Four upper-division courses in literature with a minimum of one in Spanish-American literature and one in Spanish literature.

(B) Culture: Two courses in Latin-American literature; Spanish 110A-B-C.

(C) Linguistics: Linguistics 101, 102, 103; Philosophy 135.

School of Physical Sciences

The School makes no specific English course requirements but does require that students have the competence to express ideas in written English with clarity and precision.

Departmental Requirements

Chemistry — Chemistry 1A-B-C or 11A-B-C; Chemistry 51A-B-C, 131A-B-C, 150, 151; 152, 215; two additional chemistry courses chosen from those numbered 160-253; Mathematics 2A-B-C; Physics 5A-B-C; six additional courses chosen from mathematics, physics, and biology. (See p. 191 for a more detailed discussion of the undergraduate degree requirements.)

Mathematics — One year of calculus (Mathematics 2A-B-C or equivalent); 12 upper-division or graduate courses in mathematics including Mathematics 120A-B-C or equivalent and Mathematics 140A-B-C or equivalent; three additional courses in chemistry, mathematics, physics, or information and computer science; three years of high school study or one year of college study in French, German, or Russian (in extraordinary circumstances a student may satisfy this requirement by passing a special examination administered by the Department of Mathematics); an overall grade point average of 2.3 or higher in mathematics courses.

The requirements for the Bachelor's Degree in Mathematics apply to freshmen entering UCI in 1970-1971 and thereafter. All other students are subject only to the requirements in force at UCI at the time in which they became freshmen; however, no students are required to take more than *one year* of a foreign language.

Physics — Physics 5A-B-C-D-E; six courses numbered between 110 and 149; two quarters of advanced laboratory (Physics 151-153); Mathematics 2A-B-C,

3A-B-C, and three courses chosen from Mathematics 142A-B-C, 143A-B-C, or 144A-B with 143A-B-C particularly recommended; and three additional upper- division courses chosen from the Schools of Physical Sciences, Biological Sciences, Engineering, or the Department of Information and Computer Science. Alternative requirements will be developed for students with special interests.

School Of Social Sciences

Social Science 1; two additional courses from Social Science 2-9; six courses from Social Science 100-199; a three-course education program during the senior year, as approved by the student's advisor; Mathematics 5A-B-C, 6A-B-C, or Mathematics 2A-B-C, 3A-B-C; Information and Computer Science 1; two additional courses in mathematics, statistics, or mathematical social science. All students who satisfy the above requirements will receive a degree in social science. Students may concentrate in a subfield. A concentration is normally based on the results of a Graduate Records Examination in a discipline.

School of Engineering

The University breadth requirement, described on page 24, does not apply.

The basic undergraduate program in Engineering consists of the Engineering core (Engineering 100A-B-C, 101A-B-C, and 105A-B-C), six additional Engineering courses, six mathematics courses, eight courses in physics and chemistry or biology, one course in computer science, nine breadth courses, three technical elective courses, and three free elective courses. The manner in which the student selects the unspecified courses determines the option or area of concentration. At the present there are five designated: Biomedical Engineering (double major), Electrical, Civil and Environmental, Environmental Management (multiple major), and Mechanical Engineering. For details see page 241.

Interschool Curricula

Comparative Culture

Preparation: During the first two years each student will ground himself in areas that will lead toward a broadly comparative study of culture by (1) taking courses appropriate to his expected area of concentration in other departments of the University, (2) taking the introductory course in his expected area of concentration within the Program, (3) satisfying the University breadth requirements, (4) completing the special requirements for entry into his expected concentration (see listings under special programs, p. 254); completing Comparative Culture I, a prerequisite for entry into the major, by the end of his sophomore year; and (6) taking one introductory course in any culture in the program.

Upper-Division Requirements: The student will concentrate in one culture represented in the Program, among the following: African Culture, American Culture, Asian Culture, Black Culture, Chicano Culture, Latin American Culture, and Russian Culture. He will take, in his area of concentration, at least eight quarter courses. He will observe the special requirements and required coures listed on page 254. The student will also take, for comparative, multicultural purposes, at least four courses in one other area and at least four additional

courses in all other comparative areas in the program, including Comparative Literature, Comparative Culture, and Classical Civilization.

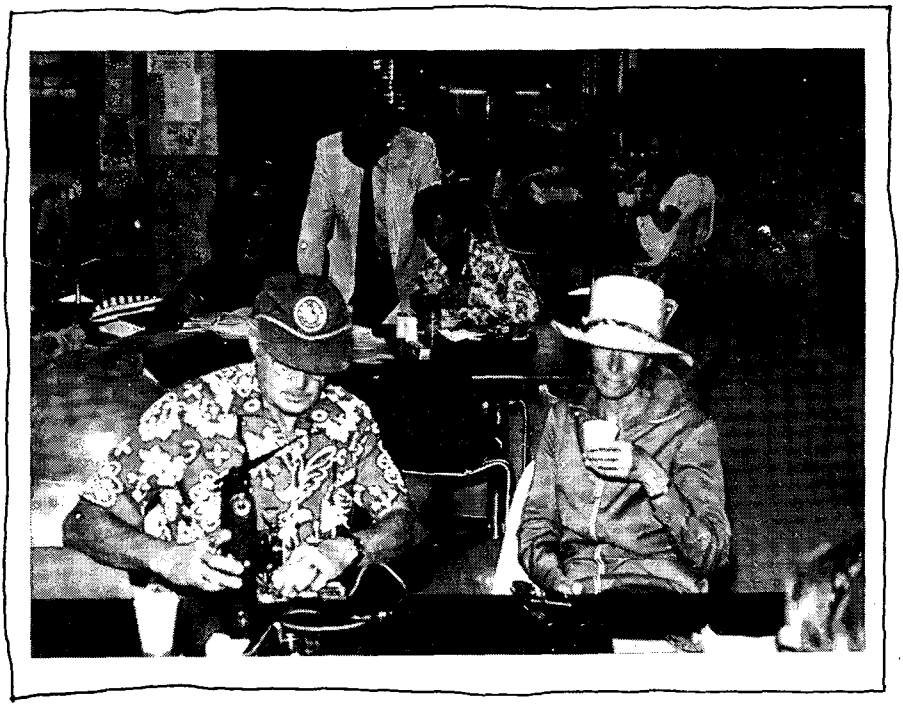
Information and Computer Science

Calculus and linear algebra (Mathematics 2A-B-C, 3A-B-C); one of the following: algebra (Mathematics 120A-B-C), probability and stochastic processes (Mathematics 130A-B-C), mathematical statistics (Mathematics 131A-B-C), or statistical methods (Mathematics 170A-B-C); Information and Computer Science 1, 2, 3, 110A-B, 120A-B, 130A-B, 190A-B-C.

These requirements are under study and may be changed in the future. Students should consult the Departmental Information Bulletin, issued in fall 1971, for a complete listing of courses and subject content.

Social Ecology

Social Ecology 1A-B-C; three introductory courses preparatory to field studies (Social Ecology 2 through 8); field study during each quarter of the junior and senior years (Social Ecology 197—one course credit per quarter).



Planning a Program

Choosing an Undergraduate Major

The student is expected to choose a major (a field of concentration) by the beginning of his junior year. Most majors are departmental and are therefore located in one of the schools; some, such as Comparative Culture, exist outside of the basic schools. The various possible majors are described later in this catalogue. Most major requirements allow the student to take a considerable number of courses in fields other than that which he has chosen as a major.

In preparation for choosing a major the student should, during his freshman and sophomore years, consult his advisor about the possibilities which may be open to him. The advisor will not be thoroughly familiar with all fields other than his own but will be able to suggest ways for the student to investigate other fields. Often he will be able to recommend specific people to whom the student should talk. Any student should feel free to go to any department and ask to speak to a major advisor in order to learn more about that field, its programs of study, and its requirements.

Programs appearing in this catalogue are subject to change, and no catalogue can give a complete idea of what a major may involve.

Most students are aware that they might like to major in one of several subjects. Almost all students are aware of those fields in which they do not wish to major. The task of choosing a major is therefore often one of refining these earlier impressions in the light of experience in courses, discussions with faculty and with other students, and the opening of new possibilities. A student should make enough inquiry to be sure that he is not rejecting a field of study because of some misconception or on the grounds of inaccurate information, and he should likewise attempt to discover the extent of the specific interests he thinks he has. The option of taking a certain number of courses on a Pass/Not Pass basis will often be helpful in this pursuit. Admission to a major is not automatic. Some major programs require specific preliminary study, and limitations of facilities may prevent some major programs from accepting unlimited enrollments.

Perhaps the most important advice to be given about choosing a major is preventive: the student should not plan freshman or sophomore programs which will prevent his entering or taking advanced courses in a field he thinks he may want as a major. For example, he should check such major (or school) requirements as foreign language, mathematics, chemistry, etc. which must be taken prior to the junior year or perhaps even begun during the freshman year. A student should also be cautious about concentrating so heavily in a certain field that he cannot move to a major in a different field if he changes his mind. The student's advisor can be helpful in attempting to formulate an overall lower-division program which will keep the maximum number of pos-

sibilities open. Such advice must come on an individual basis and in terms of the student's preferences.

Students anticipating graduate or professional study in a certain field should exercise special care in constructing their undergraduate programs, and they should make their intentions known to their advisors. Such choices naturally do not have to be made during the first two years, and may or may not be made during the second two, but investigation of the possibilities of graduate or professional study will often be helpful to students who have an idea of the direction in which they would like to go.

Some students come to the campus with absolutely no idea of the field in which they would like to major. This should not be considered abnormal, and the student should not worry about it. He will have time to take courses in various fields and make up his mind at some point during the sophomore year. He should, however, take advantage of every opportunity to learn more about the available majors, and he most certainly should confer with his advisor.

Academic Advising

Preliminary advising takes place for new students during Orientation Week in the fall. Each student is assigned a faculty advisor and an academic dean. Although the student is encouraged to consult any member of the faculty when this seems desirable, he should look especially to his advisor for help with program planning. One large problem in planning a program is being sure that opportunities are not overlooked; another is preventing the loss of certain options by default—for example, by failing to plan to take a course required for graduation or for a major which the student may later wish to elect. If certain courses are not available, then substitutions must be found. It is the function of an academic advisor to help the student make these decisions.

A lower-division student (a freshman or sophomore) will be assigned an academic advisor in his general field of interest or in the department in which he expects to major. (In some schools, however, departmental connections are not acknowledged until the student declares a major; academic advising for lower-division students in those schools is on a non-departmental or inter-departmental basis.) After a student has declared a major, his academic advisor will be a member of the department in which the student is majoring (unless the major itself is a non-departmental one).

Once assigned to a regular academic advisor, the student remains with him in that school unless there is some reason for change. A change of advisors will be made at an appropriate time if the student changes his field of interest or requests reassignment for another reason, or should his advisor be assigned to other duties. Frequently a new advisor is assigned after the student declares a major, either because the special field of interest requires it or because the school has an advising system in which this naturally takes place.

The dean of the school to which a student is assigned for advising purposes, or in which he has declared a major, has authority over the student's academic program. A student wishing to drop or add a course, seeking a waiver of a graduation or other requirement, or having questions relating to his academic progress, should see the dean of the school to which he is assigned or in which he is a major.

Although special advising systems exist for lower-division students in several of the schools, and these systems require the advisor's approval under certain conditions, it is in general a UCI policy that the advisor only advises. *The student, not the advisor, is responsible for meeting requirements and for remaining in good academic standing.* Furthermore, the advisor will not search the student out. *It is the responsibility of each student to initiate and continue periodic meetings with his advisor.* How often these meetings should occur depends upon the student's needs. In other words, it is the obligation of the academic advisor to help the student interpret requirements for graduation and to create the most advantageous program of study; but it is the student's responsibility to satisfy the academic regulations of the campus.

If the student wishes to change his area of concentration (his school or department), he must go to his dean's office and file the necessary change of major form (see p. 69). A student considering any of these changes would, of course, do well to consult his advisor beforehand.

Pre-professional Education

Students planning to pursue graduate work should supplement their undergraduate program by anticipating language requirements at major graduate schools and by intensive work in areas outside the school of their major that are of special relevance to their intended graduate work. Such students should consult their advisors to ensure that they make a wise selection of courses within the school.

Pre-Dentistry, Medicine, Nursing, Veterinary Science

A student who plans to enter a school of dentistry, medicine, nursing, veterinary science, etc. may receive his required pre-professional training at UCI. This training may be accomplished by (a) completing the major in Biological Sciences or (b) majoring in any school or department, but fulfilling concurrently the specific course requirements of the dental, medical, nursing, or veterinary school he expects to attend. A few schools request specific additional requirements (e.g., English, foreign language, physical chemistry, etc.); *a student should, therefore, check early with the professional school he seeks to enter.* Some information in these fields is available in the School of Biological Sciences (Office of Student Affairs).

More than 90 percent of the students admitted to medical schools in the United States have attained the B.A. or B.S. degree, and a large percentage of those admitted to dental schools have had three or more years of undergraduate work—this despite the fact that technically it is possible under the regulations of the American Medical Association and the American Dental Association for a school to admit students who have had as few as two years premedical or predental training. Leaders in dental, medical, and veterinary education urge prospective students to arrange their programs so that they will obtain a liberal education, since the humanities and social sciences are not offered by the professional schools. Therefore, they recommend that students preparing to seek admission to dental or medical schools plan to obtain a

Bachelor's Degree. Rather than require their students to have taken specific premedical courses, many dental and medical schools now prefer that their students come to them having the type of basic training in the biological sciences (with prerequisites in physical sciences, social sciences, and humanities) offered at Irvine.

Business and Public Administration

Undergraduate degree programs in business and public administration are not offered at UCI. Students preparing for a career in business or government usually would major in the humanities or social sciences. Students particularly interested in business administration are usually advised to concentrate on work in economics. Students interested in public administration are usually advised to emphasize economics and political science. Students wishing to prepare for the program of study in the Graduate School of Administration at UCI should choose electives to meet the general admission requirements of that program (for these requirements, see p. 294). The Graduate School of Administration, in conjunction with other schools on this campus, offers a special five-year program (commonly referred to as a "3-2 program") leading to both a Bachelor's Degree in the appropriate school and a Master's Degree in Administration. Application for admission to the program is made in the spring of the junior year.

Teacher Education

Students planning to become teachers can qualify at UCI for the Standard Teaching Credentials with a specialization in elementary teaching, secondary teaching, or junior college teaching. *All credentials require three quarters of work beyond the Bachelor's Degree.*

In their undergraduate work at Irvine, students can major in any of the departments of the various schools; they should choose for their electives courses that will satisfy the requirements for teacher certification. These courses are now being determined by each department or school. Students should consult with their advisors or with the Office of Teacher Education to determine these requirements.

The breadth of the Irvine graduation requirements simplifies the credential requirements so that the only deviation from a regular B.A. degree might be the inclusion of a fourth course in English, including one course in advanced composition, and two education courses during the junior or senior years. These English courses would fulfill the English requirement for the Elementary or Secondary credential; the two education courses might logically be Education 171, and a choice between Education 170, 172, or 175. The student working for the Elementary Credential will also need to complete one course in the theory of the structure, arithmetic, and algebra of the real number system (Mathematics 4A).

Entrance to the Graduate Program of Teacher Training requires the same grade point average as for any other graduate program. For further details on preparation for teaching, see the section on Graduate and Professional Education/Education of Teachers, page 301.

Supplementary Educational Programs

Education Abroad Program

The Education Abroad Program, now entering its eleventh year of operation, offers opportunities to undergraduate and graduate students of the University of California to study in universities overseas, and serves also as a source of information on all types of educational exchange experiences. It is administered for the University of California by the Santa Barbara campus. Associate Dean of Students, Robert F. Gentry, is the Irvine Campus Coordinator.

Study centers have been established in France, Germany, Ghana, Hong Kong, Israel, Italy, Japan, Kenya, Lebanon, Mexico, Norway, Spain, Sweden, and the United Kingdom and Ireland. In addition to the undergraduate program offered in Mexico, there is a special program for graduate students preparing for a career in teaching Spanish. This special program is also offered in Paris to graduate students planning to teach French.

Eligibility requirements are: Upper-division standing in the University at the time of participation, two years of university-level work in the language of the country with a B average (or equivalent thereof), an overall B average, seriousness of purpose, and an indication of ability to adapt to a new environment. Transfer students are eligible if they meet the language requirement and have completed at least one language course in the University of California. (The language requirement is not applicable to the centers in Africa, Hong Kong, Israel, Lebanon, and the United Kingdom.) Special arrangements can be made for the participation of graduate students.

The participants will spend from nine to eleven months abroad, including a special orientation program, six or seven weeks of intensive language preparation, a full academic year in the university of their choice, and some vacation travel. The teaching program offered in Mexico is held during the fall and winter quarters, whereas the teaching program offered in France is held during the fall and winter quarters or the spring and summer quarters.

All participants will be concurrently enrolled as students at the University of California and in the host university and will receive full credit for courses satisfactorily completed. See Education Abroad Program in the bulletin of the University of California, Santa Barbara, for a partial listing of the courses available.

The Regents endeavor to bring this year abroad within the reach of all students, regardless of their financial resources. Information concerning scholarships and loans for study abroad may be obtained from the Financial Aids Office on the Irvine campus.

Applications for 1972-73 should be in by January 14, 1972, with the exception of applications for Paris and the United Kingdom, which are due by November 15, 1971.

For further information write to the Education Abroad Program, 2108 South Hall, University of California, Santa Barbara, or contact Student Services, 1415 Library-Administration Building, University of California, Irvine.

Summer Sessions

Two summer sessions will be held on the Irvine campus. Session I will run from June 19 to July 26, 1972. Session II will be from July 27 to September 1, 1972. Students may enroll in either or in both sessions. Those who enroll in both take an academic program equivalent to a regular quarter, thus accelerating their progress toward a degree.

A wide variety of courses from the regular sessions is planned, supplemented by experimental offerings available only during the summer. Admission is open to all University students, high school graduates, and to qualified applicants over 21 years of age. Admission to Summer Session does not constitute admission to a regular session of the University; therefore, official transcripts of educational records are not required. Fees for Summer Session are the same for out-of-state students as for California students.

Information regarding Summer Session may be obtained from the Summer Session Office in Crawford Hall, telephone (714) 833-5493. Catalogues and application forms will be available in February.

University Extension

University Extension programs are designed to provide educational opportunity to adults for professional upgrading, personal growth through cultural programs, and more effective participation in civic affairs. In the broader social view, it is the assigned task of University Extension to provide the mechanism by which the resources of the University can be applied to the more rapid solution of statewide and urban problems.

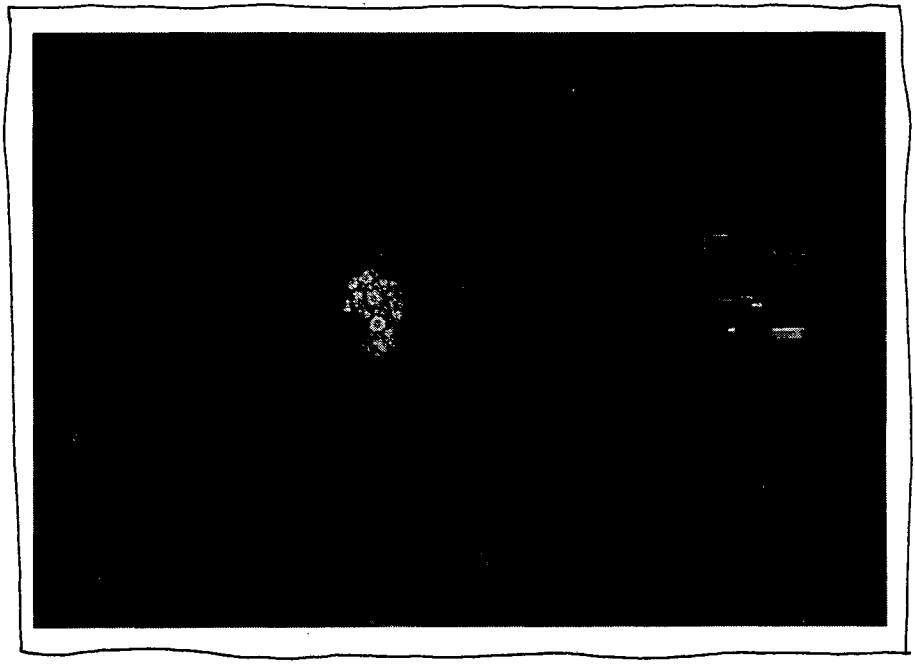
A variety of methods are used to implement these aims: classes, lecture series, discussion groups, correspondence courses, conferences, institutes, and short courses.

Extension programs in Orange County are offered on the UCI campus, at Buena Park High School, and at other locations. For detailed information, write or telephone the Extension Office of UCI in Room 1325, Crawford Hall, telephone (714) 833-5414.

Planning for Transfer to UCI

All information pertaining to the transfer student is included together for easy reference on page 59 in the Admissions section. Suggestions regarding program planning can be found there, along with specific information on transfer of credits.

Student Affairs



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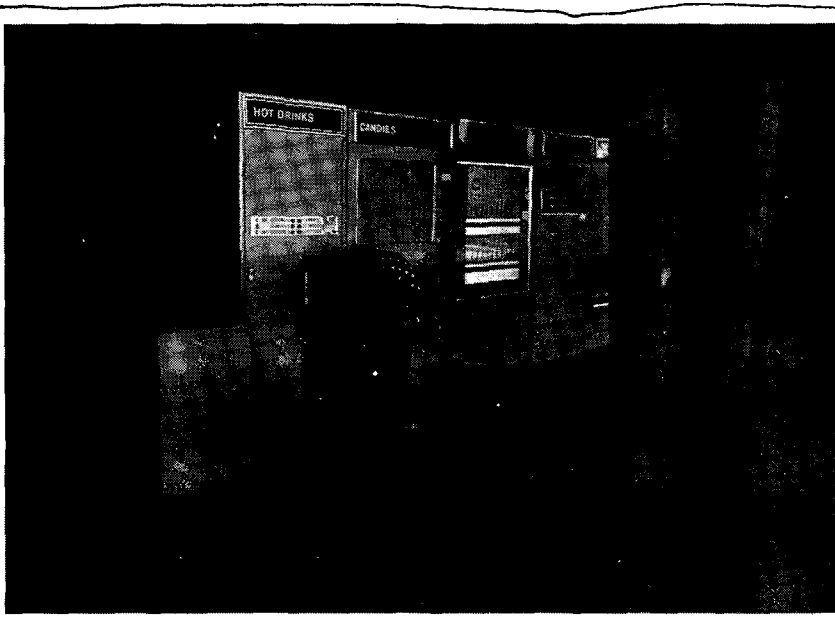


Will getting a snack

Student Affairs

The Vice Chancellor for Student Affairs has responsibility for the full range of non-instructional activities described below. These activities are designed to serve the student. Unlike the offices of student affairs on many campuses, where the administrative officer or the dean of students attempts to implement institutional regulations, the offices for student affairs at Irvine are primarily student centered and attempt to respond to student concerns. The main function within the immediate future will be to make these services more adequate and responsive to students, and, when necessary, to extend them to fit growing and changing student values.

The central concern of student affairs on this campus is therefore to provide a structure which will function adequately for a large and growing institution, but still maintain the sense of community which has been the strength of the Irvine campus up to this point.

Along with the above approach we feel that a program in student affairs must also serve an educational purpose. It is the obligation of any university to assume that students have a legitimate voice in the policies of their campus, and that students must not only speak out on issues, but also have an active role in decision-making, planning, organization, hiring and promotion of faculty, allocation of funds—in short, with every aspect of the campus with which they are involved. However, this cannot be handled by measures which are expedient or improvised only as issues arise. The responsibility of an office of student affairs is to draw students into the decision-making process in such a way that students may also implement their decisions and be held accountable for them. This involves more than the traditional device of giving students representation on a smattering of non-controversial committees and advisory teams, but in finding a full and practical way by which students can assume part of the responsibility for running their campus.

It is the conviction of the Irvine Student Affairs staff that their offices assume a *student advocate* role on issues which concern and affect students. The pattern which hopefully will evolve is one where a new level of trust and mutual engagement is not only possible but also built into the policy, implementation, and review process through substantial student participation in all areas. Weekly meetings of the Vice Chancellor's staff are open to students.

Dean of Students

Students will have occasion for visiting the office of the Dean of Students for various reasons. The services and agencies listed below are coordinated by the Dean's office. Any difficulties students might encounter that do not fall under the specific listings can be referred to this office for clarification.

Student Services

Three special areas are handled in the Student Services Office by trained, experienced people. Students with physical handicaps, students who are not U. S. citizens, and students who have questions concerning the military service and veterans affairs will find this office essential. The Special Services Office is in the Library-Administration Building, Room 1415, phone 833-7244.

Physically handicapped students at UCI can receive assistance with all areas of campus life. Students or their counselors should contact the Student Services office for any questions. This office is in the Library-Administration Building, Room 1415, phone 833-7245.

UCI students who are not U. S. citizens will find the Student Services Office helpful in obtaining documentation for visas, extensions, work permits, etc. This office can assist students with off-campus housing, hosting family programs, and personal counseling.

UCI students who must deal with the Veterans Administration or other Federal agencies for veterans affairs, should seek assistance in the Student Services Office. Men at UCI who need information or counseling regarding the Selective Service System can also get considerable help from this office. Certification of attendance at UCI can be obtained here for purposes of V.A. and S.S.S. business.

Financial Aids

Almost every student needs some kind of financial assistance during his or her academic career. The three forms of financial aid available at UCI are scholarships, grants, and loans. UCI uses only the college Scholarship Service instruments for estimating financial need.

Scholarships

Regents' scholarships, one of the highest honors conferred upon UC students, are awarded on the basis of academic excellence and exceptional promise, without reference to need. Students are eligible upon graduation from high school or upon completion of the sophomore year. Medical students are eligible during any year of their study in medical school. The appointments run for four years, for students entering from high school, or two years, for students appointed after their sophomore year. Regents' Scholars receive a $100 honorarium the first year of their appointment and a stipend each year to cover the difference between their resources and the yearly standard cost of education.

President's and University scholarships are offered to entering and continuing students who show evidence of high scholastic attainment and financial need. These awards are renewable by submitting an application for consideration each year.

There are other special scholarships available to students who qualify. While a student may not apply for a specific scholarship, careful consideration will be given to applicants with special qualifications. Applications for scholarships should be filed at the Office of Financial Aids between November 1 and January 15. Students who are not continuing students at UCI should also include official high school and college transcripts.

Grants

The University of California Grants Program is established to provide grants-in-aid for undergraduate, graduate, and medical students with exceptional financial need.

Federal Educational Opportunity Grants are available for undergraduate students only. The basic purpose of this program is to assist students whose exceptional financial need would prevent their attending college. Grants range from $200 to $1,000 per year but in every case must be less than one-half of a financial aids package, which may consist of a loan, a State Scholarship or other approved scholarship, or a grant. Grants are renewable if financial need continues and good standing is maintained. (See Educational Opportunities Program, p. 45.)

The Federal College Work-Study Program is designed to assist students from low-income families who cannot meet their college expenses. Students who qualify for work-study are provided with employment during the school year and vacation periods.

Health Professions Scholarship Grants are available to medical students only. To encourage greater numbers of students to enter the health professions, the Public Health Service of the United States Department of Health, Education, and Welfare has established grants for students in schools of medicine. Health Professions Scholarship Grants in amounts up to $2,500 per year are available to medical students of exceptional financial need who require assistance to pursue their course of study. Recipients must be full-time students and citizens or permanent residents of the United States.

Applications for grants are due from November 1 to January 15. Work-Study applications can be filed between November 1 and April 15.

Loans

National Defense Students' Loans: For undergraduate and graduate students. These loans may be granted to regularly enrolled students who are U. S. citizens or permanent residents. The amount a student may borrow is determined by his financial need; the maximum loan for an academic year is $1,000 for an undergraduate student, $2,500 for a graduate student. Repayment may be extended over a ten-year period at three per cent interest on the unpaid balance, commencing nine months after a student terminates his education. Students under 21 years of age must have parental approval on the loan section of the application and on a promissory note. A notarized Oath of Affirmation is also required.

Health Professions Student Loans: For medical students only. The Health Professions Student Loan Program established in 1963 makes loans available to medical students working toward the degree of Doctor of Medicine. Recipients must be full-time students, citizens, or permanent residents of the United States, and in need of the loan to pursue their education. Students may borrow up to $2,500 per year at an interest rate of three per cent per annum. Borrowers may repay their loan over a ten-year period beginning one year after completion of study at a school of medicine, except that payments may be deferred up to five years for advanced training including internship and residency.

Regents' Student Loans: For undergraduate, graduate, and medical students. These loans are available to regularly enrolled students. The amount a student may borrow is determined by his financial need; the maximum loan for an academic year is $1,000. Interest is at the rate of three per cent per annum and accrues from the date the student graduates, withdraws, or is dismissed from the University of California, Irvine. Repayment may be made over a period of not more than five years, commencing six months after the date on which the borrower ceases to carry a full-time course of study at the University of California, Irvine. Co-signatures are required.

Students must apply for long-term loans between November 1 and April 15. All students applying for financial aid must submit the Parents' Confidential Statement, which can be obtained from high school or junior college counselors and from the Office of Financial Aids at UCI. One application qualifies a student for consideration for all programs.

In addition to these long-term loans, various organizations and philanthropic individuals have provided money to create a short-term student loan fund. Loans from these funds are of a short-term nature to cover emergency needs and do not bear interest.

A brochure giving programs and filing instructions is available from the Office of Financial Aids, Library-Administration Building, Room 1441.

Placement

The Placement Center serves the student both while he is attending UCI and upon graduation. While he is in school, the student may receive help from the Student Employment division of the Center. Students and UCI graduates may receive career and educational placement assistance from the Career Placement Office and from the Educational Placement Office.

Career Counseling and Placement

Students in all majors and at all levels, freshmen through graduate Students, are invited to seek assistance in career planning and job search through Career Counseling and Placement.

A career counselor interviews all applicants to acquaint them with the services offered, such as preparing a resume, interviewing process, discussing requirements for specific careers, salaries, etc.

Career counseling seminars are held for all students at all levels and in all majors to assist them in exploring career choices and arriving at career decisions. Graduating seniors and graduate students are offered the opportunity to interview on campus with representatives from organizations employing college-trained personnel.

Students and alumni seeking immediate employment may register with the Placement Center. Job listings are available for review with the counselor. Applicants are referred directly to employers who have current career opportunities. Students may be referred to organizations which indicate a continuing interest in prospective applicants, i.e. federal, state, and local government agencies.

A library of brochures is available describing career opportunities in business, industry, government, and social organizations. The *College Placement Annual* is available to all graduating seniors and graduate students as an aid in job search, providing information such as company location, size, and occupations. Students are encouraged to obtain this literature and, if they wish, discuss it with the career counselor.

Catalogues, brochures, and materials covering requirements and admission to professional and graduate schools are available, and students are encouraged to utilize this service.

Students should begin their career exploration in their freshman year. The courses taken and the major chosen should follow a logical, developing plan, culminating in the senior year with a mature and satisfying career goal. The Career Counseling and Placement Office is located in the Engineering Building, Room 644.

Educational Placement

It is the function of the Educational Placement Office to assist and support eligible educators in locating and securing desired positions as teachers, faculty members, counselors, or administrators in public and private schools, community colleges, four-year colleges, and universities throughout the United States and abroad.

Full-time, regular students who have completed, or expect to complete within the current academic year, three quarters of upper-division or graduate work, and who are currently enrolled in a degree or credential program as matriculated students, are eligible to use the services of the Educational Placement Office. Also, former students of the University of California who have been enrolled for three quarters, or two semesters of upper-division or graduate work in a degree, credential, or special program are eligible.

The Educational Placement Office is prepared to counsel and advise students concerning career objectives and alternatives, desirability of positions, supply and demand of educational positions, and professional problems.

Student Employment

The Student Employment Office assists UC students, student spouses, and alumni in obtaining part or full-time employment during the academic year and summer vacation. The Office is located in the Library Administration Building, Room 167.

Job listings are provided to assist each applicant in finding suitable employment. While on-campus employment is limited, off-campus job listings range from general labor to highly technical work. In addition to general job openings, room and board jobs are listed with the office. Applicants may also register for child care, home typing, and tutoring positions.

A library of summer work catalogues and brochures including information on federal and state employment, recreation work, camp jobs, and employment abroad is also available.

Housing and Food Service

The Central Housing and Food Services Office is located on the first floor of the Library-Administration Building, Room 1407. The Housing Cashier and Residence Hall Manager are located in offices in Mesa Court. Services include all on-campus housing and food operations, vending, and accommodations for conferences and special events.

Food services for commuter students are available in a variety of locations. Gateway Commons, located across from the Library-Administration Building, has both restaurant and cafeteria service. Student Center 1, next to the Science Lecture Hall, includes a snack bar. Vending machines are located in and around several buildings, including Engineering, Physical Sciences, Crawford Hall, and Student Center 2.

The University maintains on-campus residences for 1200 single undergraduate students in Mesa Court. Each residence accommodates 50 or 60 students and a resident assistant, providing an opportunity for small-group living, self-government, and leadership experience. Each residence is divided into suites of four or five double rooms, with living room and bath; each residence also contains a lounge, recreation room, and library. Rooms are furnished except for bedspreads, blankets, and study lamps. Mesa Commons provides food service for all students in Mesa Court. The residences close during the Christmas and spring recesses, although special housing arrangements may be made.

The University also has 350 one-, two-, and three-bedroom apartments on campus. Most are furnished, and all have carpeting, draperies, stoves, and refrigerators. The apartments are rented to married students, single graduate students, and some faculty and staff.

Students who live in campus residences and apartments must have a signed housing contract and deposit on file with the Housing Office.

Off-campus room and apartment listings are available to students who call in person at the Housing Office. Since listings change from day to day, arrangements cannot be made by mail. The University is not prepared to inspect accommodations; transactions must be made individually and directly with landlords. A clear understanding of occupancy terms and conditions, preferably in writing, is recommended.

Student Activities

The Student Activities Office, located on the first floor of the Gateway Commons, is the coordinating center for the myriad of co-curricular activities on the UCI campus. The Activities staff works in a resource/advisory capacity with over seventy registered student groups and the Associated Students government. In addition, the staff facilitates the opportunity for individual students to participate in existing campus programs or in initiating new projects.

This office coordinates the Student Volunteer Bureau and publicizes the varied credit and non-credit community projects seeking student participation. Programs which need student volunteers include tutoring, working with physically handicapped and mentally retarded children, speech therapy programs, free breakfast programs, and many others.

Travel information, including University of California charter flight programs, is available through the Activities Office.

Another function of the Student Activities Office is the coordination of the Temporary Union Building (TUB) and Student Centers 1 and 2. The TUB provides recreational facilities such as pool and ping pong and also features a small student store. Student Center 1 is a popular gathering place and Student Center 2 offers lounges and a quiet place to study during the week and a variety of programs on the weekends.

In addition to its central location, the Student Activities Office operates an outpost in Mesa Court and the Student Activities Trailer Park (Trailer 903) located across from Humanities Hall.

Educational Opportunities—Special Services, Recruiting, Counseling Programs

The purpose of these programs is to assist culturally and economically disadvantaged as well as physically handicapped students in enrolling and succeeding in academic studies. The difficulties these students encounter in seeking a college education may range from inadequate public school preparation to a lack of money to support their education. The EOP-Program is designed to assist students in overcoming these and other problems by providing special admissions consideration, financial aid, academic support through advising, tutoring and a Communication Skills Center as well as supportive counseling assistance on a continuing personal basis. There is also special financial, academic, counseling, and social assistance for students from different minority or ethnic group backgrounds.

Eligibility

Students with disadvantaged or physically handicapped backgrounds are encouraged to apply. Particularly encouraged to apply are those minority group, low-income and physically handicapped persons who may not meet admissions requirements but who can offer evidence supporting their ability to achieve at the University level. In those cases where entering the University at this time would not seem appropriate, the Admissions Committee may recommend to the student a program of study in a junior college or elsewhere, hoping that he or she may qualify for acceptance at UCI as soon as possible.

Financial Assistance

Being able to afford to go to college need no longer be the determining factor in deciding whether or not to attend. Students admitted to UCI under the EOP-Program are considered for financial assistance on the basis of need. Funds can be provided to cover room and board, registration fees, books and supplies, and living expenses when a student or his family is unable to meet these expenses. Financial aid is comprised of a combination or "package" of grant, loan, and summer or part-time employment based on the individual need of the student applicant. Individual financial aid and counseling is provided each student through the Financial Aids Office.

Academic Support

To help insure the academic success of EOP students, tutoring and advising

are available at the University through the Special Services Office. Students are encouraged to seek counseling, academic advising, and group and individual tutoring in academic subjects. Reading, writing and listening skills, techniques of studying, note-taking and exam preparation can be improved through taking part in the Communication Skills Center on campus.

Admissions

Prospective EOP students must complete the usual admission forms and procedures. Applications may be obtained from the Admissions Office. In addition to submitting an application for admission and requesting that transcripts of records from all prior schools be sent to UCI, the EOP applicant must (1) write a short autobiographical essay, focusing on his academic potential and academic goals, and (2) have at least three people write recommendations (these may be teachers, counselors, persons in the community, or employers).

Inquiries regarding the EOP-Program should be directed to:

Office of Admissions
Library-Administration Building
University of California, Irvine
Irvine, California 92664

Phone: (714) 833-6704

Recreation Sports

UCI students are invited to participate in the Recreation Sports Program offered by the Physical Education Department.

Intramural sports competition for men and women is designed for those who enjoy friendly competition with other UCI students on an organized basis. Students may join a sports club for specialized instruction and competition with other campuses in a particular activity. Free-time recreation is available throughout the academic year. Students may utilize the Crawford Hall facilities which include a swimming pool, handball courts, gymnasium, combatives room, weight room, and tennis courts.

For further information contact the Recreation Sports Office, Room 1114, Crawford Hall, or call 833-5346.

Central Campus Calendar

All events that take place on the campus are cleared through Central Campus Calendar Office. All campus and non-campus organizations should contact this office for assistance in scheduling University facilities. In addition to securing facilities for an event , the CCC office also assists with ordering support services (projectors, refreshments, tables, chairs), to help make it a successful activitity. The Calendar Office is in the Library-Administration Building, Room 1433, telephone 833-7494.

Innovation in Student Life

Innovation in Student Life (ISL) provides an informal center for the exchange of ideas, the gathering of fact and opinion, and the initiation of dialogue among students, faculty, and community. It engages participants in cooperative en-

deavors and provides a forum for students who want immediate, relevant application of subject matter to their own lives.

To avoid the dissipation of creative energy which often occurs when innovation is "scheduled" into a system, ISL focuses upon a group of programs rather than carefully constructed objectives. The two basic goals are (1) stimulating and supporting a wide variety of on- and off-campus activities designed to have novel educational and communication-enhancing effects upon the university community while also being satisfying and fulfilling for the individual; and (2) opening to scrutiny those aspects of university-community life that appear to be dehumanizing and stultifying in their impact on people.

Basically, ISL is administered through open "town meetings" on Monday evenings from 5:30 to 7:00. Other functions of the ISL director—co-curricular learning, counselor-at-large, and ombudsman (a friendly intermediary or "grievance man")—are concurrently "acted out" through the organizational medium of ISL and its membership. The Innovation in Student Life Office is located in Trailer 902 (next to Student Center 2).

Student Health Services

Among the services available to all regularly enrolled students on the UCI campus is a Health Service, under the direction of a Physician Director. The Student Health Service facilities include an outpatient clinic and dispensary, staffed by physicians and nurses, and supported by x-ray and clinical laboratory. General medical clinics are held 8 a.m. to 4 p.m. every day during the week. Specialty clinics are held at various regular intervals, by appointment. An inpatient infirmary provides care for students who need bed care.

In addition to the above facilities, an insurance program provides for most emergency care, surgery, and hospitalization when such care is required and not available at the Student Health Service. Each enrolled student at UCI will have a basic health and accident insurance plan in force.

Clinical counseling and help for emotional problems are available through the Mental Health Division of the Student Health Service. Psychiatrists and psychologists provide a full spectrum of services to students.

The Student Health Service encourages preventive medicine. It supplements but does not supplant the family physician. Full and mutual cooperation between the Student Health Service and the family physician is encouraged.

Counseling Services

Counseling represents an opportunity for a person to clarify his needs and goals through dialogue with another person.

The Counseling Center (544 Engineering Building) serves as a focus for counseling services on the campus, but students should be aware that many people in the University are willing to make themselves available if a student requests help. The Counseling Center includes a staff of counselors who are prepared to assist students in making personal, educational, and vocational decisions.

In addition to providing opportunities for a student to share his concerns in a private setting on a one-to-one basis, the Center also sponsors group activities for students who wish to explore their values and feelings in collaboration with others. The Counseling Center emphasizes the confidentiality of the counseling relationship by maintaining no personal records on students who visit the Center.

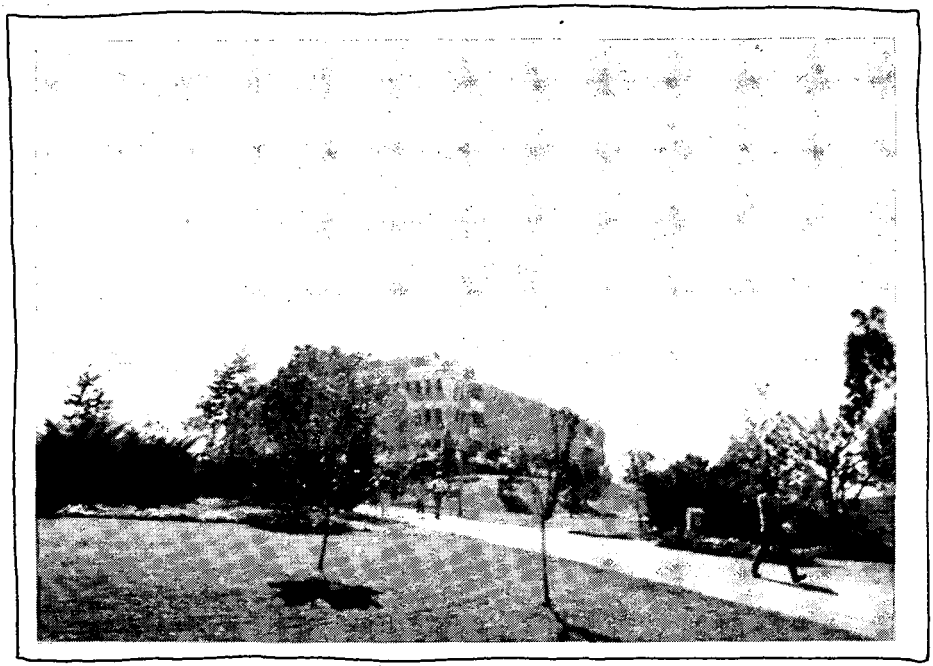
Student Conduct and Discipline

In order to make the administration of campus activities coherent and consistent, the University will provide the student with a handbook setting forth the standards of conduct expected of UCI students. This booklet, *University of California Policies Relating to Students and Student Organizations, Use of University Facilities, and Non-Discrimination,* gives the rules concerning conduct and related matters, as established by the policies of The Regents and President of the University, as well as campus regulations. A student enrolling in the University is expected to assume an obligation to conduct himself in a manner compatible with the University's function as an educational institution. The booklet is a reinforcement of that assumption.

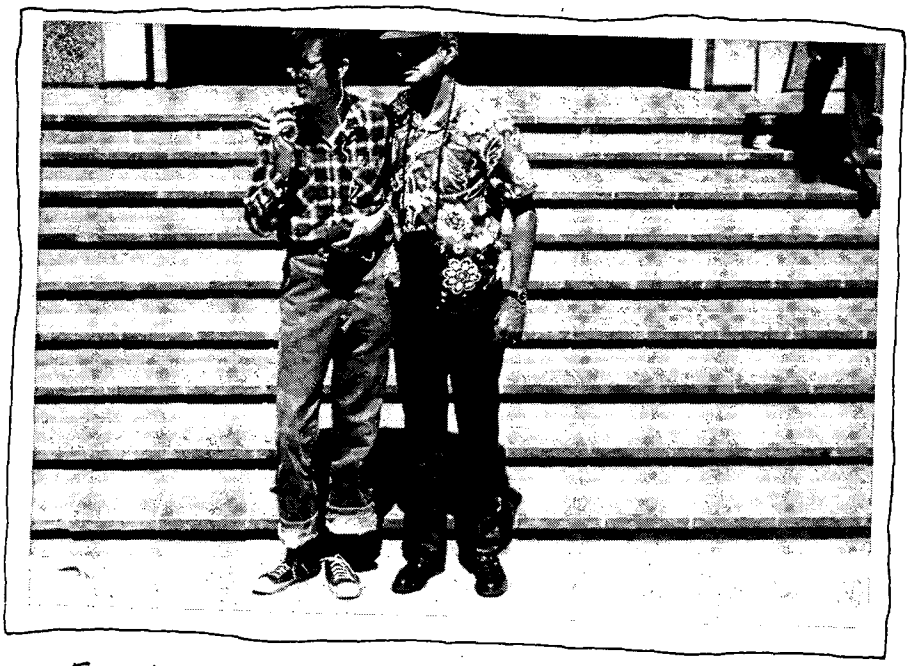
Student Affairs Staff

John C. Hoy, Vice Chancellor—Student Affairs
Robert S. Lawrence, Assistant Vice Chancellor
Lucille Kuehn, Director—Program Development
Janice L. Jenkins, Coordinator—Special Projects
Charles R. Pieper, Business Manager
Gerald B. Sinykin, Director—Student Health Services
John W. Brown, Dean—Administrative Services for Student Affairs
James G. Harvey, Director—Counseling Services
Jack F. Little, Director & Ombudsman—Innovations in Student Life
James P. Phillips, Acting Dean of Students and Associate Dean—Housing and Food Services
Raymond H. Thornton, Director—Intercollegiate Athletics
Robert E. Sharpe, Associate Dean—Financial Aids
Richard A. Everman, Associate Dean—Registration
Timothy S. Knowles, Associate Dean—Recruiting Services
Julio Garcia, Associate Dean—Special Services
Robert Gentry, Associate Dean—Student Services
Cynthia Johnson, Associate Dean—Student Activities

Admissions & Enrollment



This is the Biology building



Fred and Will at the Biology Building

Undergraduate Admissions

The University's undergraduate admission requirements, which are the same on all campuses, are based on two principles. Simply stated, they are: 1. The best predictor of success in the University is high scholarship in previous work. 2. The study of certain subjects in high school gives a student good preparation for University work and reasonable freedom in choosing an area for specialized study.

Applying for Admission

To apply for admission to the University as an undergraduate, request an application form from any campus Admissions Office. Submit your completed application and the related materials to the Admissions Office on the campus where you wish to enroll on or after the appropriate date below:

Application Filing Dates

Fall Quarter 1972	November 1, 1971
Winter Quarter 1973	July 1, 1972
Spring Quarter 1973	October 1, 1972

The opening dates listed above are the dates on which application materials are first made available; however, they may be requested in advance. All campuses observe these dates for the beginning of application filing. Each campus will accept for consideration all applications filed during the first month of the filing period. After the first month the deadline will vary from campus to campus. Each campus has enrollment quotas that limit the number of new freshmen and new advanced standing students that may be admitted. Once these quotas have been filled, additional applications cannot be accepted and will be redirected to another University campus where enrollments are still open.

For this reason, you should give careful thought to the order in which you list your alternate campus preferences on the application form. Equally important, you should file your completed application as early in the application filing period as possible.

Through its redirection program, the University has been able in the past to assure that each qualified applicant is offered admission to one of the University campuses. As the number of applications exceed the quotas established for a campus, assistance will be provided to qualified applicants who are willing to consider admission to an alternate campus of the University.

Application Fee

There is a *nonrefundable* fee of $20 for filing an application for admission. Make your check or money order payable to The Regents of the University of California and attach it to your application form.

Duplicate Applications

You should not file more than one application for admission to the University for the same quarter. Since the admission requirements are the same on all campuses, admission to the University entitles you to attend the campus you have selected if there is space available. If you apply for admission to more than one campus, the processing of your applications will be suspended until the Director of Admissions is notified of the one campus on which you wish to be considered. That campus will then continue the processing of your records. Fees submitted with duplicate applications will not be refunded.

Change of Campus

If, after you have applied for admission, your plans change and you prefer to attend a different campus of the University, you should write to the Director of Admissions, 570 University Hall, Berkeley, California 94720. In your letter indicate the new campus you wish to attend, and give your reasons for the change. Your application will be transferred to that campus if enrollment is open, but you will receive a new admissions priority assignment based on the date on which you made your request for the change.

If you wish information on housing from the new campus, write directly to the appropriate office there.

Transcripts

Every applicant is responsible for requesting that the high school from which he graduated and each college he has attended send official transcripts of his work promptly to the Office of Admissions where his application is filed.

If you are applying for admission as a freshman, ask your high school to submit a preliminary transcript showing your work through the junior year. The transcript also should list the courses you are now taking and those you plan to take. You must also arrange for a final transcript that includes your courses and grades for the senior year and a statement of graduation. If you have completed any college courses before or at the time of graduation, a transcript of your record from the last college attended is required.

If you are applying for admission in advanced standing, have your graduating high school send a transcript of your record immediately to the Office of Admissions, which will also need a transcript from each college you have attended. A preliminary transcript from your present college should list the courses you are now taking and those you plan to take before transfer.

If you attend any other schools or colleges after your application to the University has been filed, your work there is considered to be part of your record and must be reported to the Office of Admissions.

The transcripts and other documents that you submit as part of your application become the property of the University; they cannot be returned to you or forwarded in any form to another college or university.

Notification of Admission

Applicants for the fall quarter will be notified of their eligibility beginning about February 15, and most freshmen will have been notified by May 15. (There

are similar notification periods for other quarters.) Delays will occur if required records have not been received by the Office of Admissions. Since each application is considered individually, the length of time before notification is subject to some variation depending upon the unique circumstances of each applicant.

If admitted to the University, you will be asked to sign and return a Statement of Intention to Register, accompanied by a nonrefundable fee of $50. This amount will be applied toward payment of the University Registration Fee, provided you register in the quarter to which you have been admitted.

Admission to the University is not an assurance of financial aid nor does it guarantee assignment to University housing. Separate applications are required of applicants desiring financial aid or University housing.

Re-Application

An application for admission is effective only for the quarter for which it is submitted. If you are not eligible for admission, or if you are admitted and do not register, you must file a new application if you wish to be admitted to another quarter. The new application will be considered in light of the admission requirements in effect and the space available on the campus.

Admission to Freshman Standing

The University defines a "freshman applicant" as a student who has not attended a collegiate institution for more than one quarter or one semester after high school graduation, irrespective of the total advanced standing units earned. Summer sessions are excluded in the above determination.

Requirements for California Residents

To be eligible for admission to the University as a freshman you must meet the Subject Requirement, the Scholarship Requirement, and the Examination Requirement, which are described below.

If you are not a resident of California you must also meet certain additional requirements that are discussed in the following pages. As a nonresident applicant you must show exceptional academic promise in order to qualify for admission.

Subject Requirement

You must complete certain high school subjects with at least a grade of C in each semester of each course. (Counselors often refer to this as the "a to f" requirement.) If you are a graduate of a California high school, these courses must appear on a list that your high school principal has certified meet the course descriptions below and that he has placed on file with the Director of Admissions. If you are a graduate of an out-of-state high school, the Office of Admissions will determine if your courses are equivalent.

a. History, 1 year
   One year of United States history, or one-half year of United States history and one-half year of civics or American government.

b. English, 3 years
Three years of English—composition, literature, oral expression.

c. Mathematics, 2 years
Two years of mathematics—elementary algebra, geometry, intermediate and advanced algebra, trigonometry, calculus, elementary function, matrix algebra, probability, statistics, or courses combining these subjects. Nonacademic courses such as arithmetic and business mathematics may not be used.

d. Laboratory Science, 1 year
A year course in one laboratory science, taken in the tenth, eleventh, or twelfth grade.

e. Foreign Language, 2 years
Two years of one foreign language. Any foreign language with a written literature may be used.

f. Advanced Course, 1 or 2 years
This requirement must be satisfied by one of the following:

Mathematics
A total of one year of advanced mathematics--intermediate algebra, trigonometry, or other comparable mathematics courses.

Foreign Language
Either an additional year in the same language used for "e" above or two years of a second foreign language.

Science
A year course in any laboratory science completed subsequent to the laboratory science used for "d" above.

Elective Courses
The subjects listed above will account for ten to eleven of the fifteen high school credits required for admission to the University. A year course in high school is equivalent to one credit. The remaining credits provide an excellent opportunity for you to broaden your preparation for University work by taking elective courses in areas other than those in which you have concentrated.

Scholarship Requirement

Not only must you earn at least a C in each of the courses required for admission, you must also earn an overall average of B in those on the list which you take after the ninth grade. If you are a nonresident applicant, your grade-point average in the required subjects must be 3.4 or higher. (A 3.0 average is equal to a B average.)

In determining the required B average, the University will use a semester grade of A in one course to balance a semester grade of C in another. Grades you received in courses taken in the ninth grade or earlier are not used in determining your scholarship average. The grades that appear on your official high school transcript, including those earned in accelerated and advanced courses, are the grades the University will use in evaluating your record. Grades are counted on a semester basis unless a school gives only year grades.

You may repeat up to a total of two semester courses, in which you received a grade of D or lower, in order to meet the subject and scholarship requirements. The grades you earn in repeated courses, however, will not be counted higher than C in determining your scholarship average. If the courses you repeat were taken before the ninth grade, they will be treated as if you were taking them for the first time.

Examination Requirement

All freshman applicants must submit acceptable scores from the College Entrance Examination Board tests listed below. This requirement also applies to certain advanced standing applicants; for details see page 10. If you are applying for admission to the fall quarter, you should take the tests no later than January of your senior year. The following tests are required:

1. Scholastic Aptitude Test (The verbal and mathematics scores you submit from this test must be from the same sitting.)
2. Three Achievement Tests, which must include (a) English Composition, (b) one from among the social studies or one from among the foreign languages, and (c) one from mathematics or one from among the sciences.

If you are a California resident and your scholarship average in the required high school subjects is from 3.0 to 3.09 inclusive, you must earn a total score of 2,500 or higher in these tests. The scores of all applicants will be used to assist the University in counseling, guidance, and placement, and when possible, to satisfy the Subject A requirement.

Admission by Examination Alone

If you do not meet the scholarship and subject requirements for admission, you may be able to qualify for admission as a freshman by examination alone. To do so, you must take the same CEEB tests discussed previously but must earn higher scores. The required total score on the Scholastic Aptitude Test is 1,100, and you must earn at least 500 on each Achievement Test. If you are a California applicant, your total score on the three Achievement Tests must be 1,650 or higher. If you are a nonresident applicant, your total score on the three Achievement Tests must be 1,725 or higher.

Examination Arrangements

Make arrangements to take the required tests with the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton, New Jersey 08540. (Test fees should be paid to the Educational Testing Service, not the University.) Your test scores will be regarded as official only if they are reported directly to the Admissions Office by the Educational Testing Service. Also, your final notification of admission cannot be released until your scores from the CEEB tests have been received by the Admissions Office. The testing schedule is listed below:

TEST DATES	CLOSING DATES
October 9, 1971 (SAT in California only)	September 22, 1971
November 6, 1971 (SAT only)	October 20, 1971

December 4, 1971	November 17, 1971
January 8, 1972	December 20, 1971
February 1, 1972 (Greek Ach. only)	Unknown
March 4, 1972	February 16, 1972
April 15, 1972 (SAT only)	March 29, 1972
May 6, 1972 (Achievement only)	April 19, 1972
July 8, 1972	June 21, 1972

The closing date is the last date for guaranteed registration.

Requirements for Non-California Residents

The freshman applicant who does not claim California residency must: (1) graduate from a regionally accredited high school; (2) complete satisfactorily the "a to f" sequence of subject requirements; (3) earn a grade point average of at least 3.4 (B plus) on the courses used to meet the subject requirements; (4) submit the following test scores from the College Entrance Examination Board:

a. Scholastic Aptitude Test—Verbal and Mathematics.

b. Achievement Tests—English, Social Science/Foreign Language, Science/Mathematics.

College Courses Completed before High School Graduation

Advanced standing credit will be granted for an acceptable college course taken while still in high school if completed after the tenth grade and if reported on a valid transcript issued by the college or junior college which conducted the course.

Admission in Advanced Standing

The University defines an "advanced standing applicant" as a high school graduate who has been a registered student in another college or university or in college-level extension classes other than a summer session immediately following high school graduation. An advanced standing applicant may not disregard his college record and apply for admission as a freshman.

Advanced Standing Admission Requirements

The requirements for admission in advanced standing vary according to your high school record. If you are a nonresident applicant, you must also meet the additional requirements described at the end of this section. If you have completed less than twelve quarter or semester units of transferable college credit since high school graduation, you must also satisfy the examination requirement for freshman applicants.

The transcript you submit from the last college you attended must show, as a minimum, that you were in good standing and that you had earned a grade-

point average* of 2.0 or better. If your grade-point average fell below 2.0 at any one college you attended, you may have to meet additional requirements in order to qualify for admission.

As an advanced standing applicant you must also meet one of the following conditions:

1. If you were eligible for admission to the University as a freshman, you may be admitted in advanced standing any time after you have established an overall grade-point average of 2.0 or better in another college or university.

2. If you were not eligible for admission as a freshman only because you had not studied one or more of the required high school subjects, you may be admitted after you have:
   a. Established an overall grade-point average of 2.0 or better in another college or university,
   b. Completed, with a grade of C or better, appropriate college courses in the high school subjects that you lacked, and
   c. Completed twelve or more quarter or semester units of transferable college credit since high school graduation or have successfully passed the CEEB tests required of freshman applicants.

   There is an exception to this requirement. Up to two units of credit in the required high school subjects will be excused if you have earned a grade-point average of 2.4 or better in 84 quarter units (56 semester units) of college credit in courses accepted by the University for transfer. Any deficiency over two units in the required high school subjects must be made up by completing appropriate college courses with a grade of C or better.

3. If you were ineligible for admission to the University as a freshman because of low scholarship or a combination of low scholarship and a lack of required subjects (see p. 54), you may be admitted after you have:
   a. Earned a grade-point average of 2.4 or better in at least 84 quarter units (56 semester units) of college credit in courses accepted by the University for transfer, and
   b. Satisfied the high school subject requirement by completing appropriate college courses with a grade of C or better.
   The exception described at the end of 2 above also applies in this case.

Nonresident Applicant

In addition to meeting the regular requirements for admission in advanced standing, a nonresident applicant must also have a grade-point average of 2.8 or higher in the college courses he has taken that are accepted by the University for transfer credit.

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*Your grade-point average is determined by dividing the total number of acceptable units you have attempted into the number of grade points you earned on those units. You may repeat courses that you completed with a Grade lower than C up to a maximum of 16 quarter units without penalty.

The scholarship standard is expressed by a system of grade points and grade-point averages earned in courses accepted by the University for advanced standing credit. Grade points are assigned as follows: for each unit of A, 4 points; B, 3 points; C, 2 points; D, 1 point; I and F, no points.

A nonresident applicant who graduated from high school with less than a 3.4 average in the subjects required for admission must have completed at least 84 quarter units (56 semester units) of transferable work with a grade-point average of 2.8 or higher.

Preparing for the University

Certain specific high school subjects are required for admission to the University, whether you are applying as a freshman or in advanced standing. In addition, other preparatory subjects are strongly recommended for many University programs in order to give students the needed background in their chosen fields of study. The lack of a recommended high school subject may delay a student's graduation from the University.

You will find details about these recommendations in *Prerequisites and Recommended Subjects,* a University publication sent each year to high school and college counselors.

Advanced Placement

The Advanced Placement Examinations of the College Entrance Examination Board are taken, usually during the senior year, in conjunction with courses taken in high school. You will receive ten quarter units of University credit for each examination (except Latin examinations which earn five quarter units each) in which you earn a score of 5, 4, or 3. These credits will apply toward the total required for graduation from the University.

Credit from Another College

The University gives unit credit to transfer students for courses they have completed in other accredited colleges or universities. To be accepted for credit, the courses must be consistent with those offered by the University.

If an applicant has taken extension courses at another college or university, the Office of Admissions will determine if the courses are acceptable for University credit. The application of credit earned in extension courses toward the requirements for a University degree will be determined by the faculty of the school or college in which the applicant plans to enroll.

Subject A Requirement

The University requires every undergraduate student to demonstrate an appropriate level of ability in English composition. This requirement is known as Subject A and may be satisfied by:

1. Achieving a grade of 5, 4, or 3 in the Advanced Placement Examination in English given by the College Entrance Examination Board (CEEB), or by
2. Achieving a score of 550 or higher in the CEEB Achievement Test in English Composition, or by
3. Completing an acceptable college-level course of four quarter units or three semester units in English composition with a grade of C or better.

If you have not established your Subject A standing in one of the above ways, you should report to the campus office of Subject A at the time of registration to take a CEEB placement test.

If you do not meet the requirement in one of these ways, you must enroll in a non-credit course in Subject A during your first quarter at the University. A fee of $45 is charged for the course.

Admission to Limited Status

Limited students are those with undergraduate degrees who seek to complete additional undergraduate courses to qualify for admission to a graduate or professional program. The admission of Limited students must be recommended by a graduate advisor and is subject to the final approval of the Dean of the Graduate Division. Students who have neither an undergraduate or graduate goal are encouraged to enroll in courses through University Extension.

Admission of Foreign Students

The credentials of an applicant for admission from another country in either undergraduate or graduate status are evaluated in accordance with the general regulations governing admission. The completed application, official certificates, and detailed transcripts of record should be submitted to the Office of Admissions several months in advance of the opening of the quarter in which the applicant hopes to gain admittance.

English Proficiency

An applicant from another country whose native language is not English will be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in the University. Foreign students whose schooling has not been in English must take the Test of English as a Foreign Language (TOEFL). Arrangements to take the test may be made by writing directly to TOEFL, Educational Testing Service, P.O. Box 592, Princeton, New Jersey 18540, U.S.A. Results of the test should be forwarded to the Office of Admissions. A score of 550 is required for the TOEFL test.

Language Credit

An applicant from another country whose native language is not English is given college credit in his own language and literature only for courses satisfactorily completed in his country at institutions of college level, or for upper-division or graduate courses taken in the University of California or in another English-speaking institution of approved standing.

Planning for Transfer to UCI

The University is committed to serve as fully as possible the educational needs of students who transfer from other California collegiate institutions. The principles covering transferability of unit credit and course credit are explained

below and, unless otherwise indicated, are much the same whether transfer is from a two-year or a four-year institution. Information regarding eligibility for transfer may be found above in the section on Admission to Advanced Standing.

Unit Credit for Work Taken Elsewhere

The University of California grants unit credit for courses completed in other accredited colleges and universities when such courses are consistent with the functions of the University as set forth in the Master Plan for Higher Education in California. Equivalent advanced standing credit from institutions on the semester calendar may be determined at a ratio of one semester unit to one-and-one-half quarter units. (180 quarter units, equivalent to 45 UCI quarter courses, are needed to graduate from UCI.)

California Community (Junior) Colleges — Students often find it advantageous to complete the first two years of a University of California undergraduate program at one of the California Community Colleges, which are an integral part of the state's system of higher education. If a high school graduate cannot be accommodated on his campus of first choice, he may choose to attend a junior college and transfer to his preferred University campus at a later time. A student may earn any or all of the first 105 quarter units (70 semester units) toward a University degree in a community college. No further unit credit may be transferred from a community college, although subject credit for courses taken will still be granted.

Students anticipating transfer to UCI are urged to consult with their junior college counselors as to the acceptability of course work in the University. In addition, they should familiarize themselves with the course numbering scheme of the junior college catalogue, since the course numbers usually reflect the transferability of courses. Students transferring from a community college in continuation of regular attendance, and making normal progress toward a degree, may elect to meet as graduation requirements either those in effect at the time of entering the community college or those in effect at the time of graduation or transfer.

Four-Year Institutions — Unit credit is granted for courses consistent with the University of California's functions and which have been completed in colleges or universities accredited by the appropriate agencies.

University of California Extension — Course numbers prefixed by XB, XD, XI, XL, XR, XSB, and XSC are granted credit toward the Bachelor's Degree on the same basis as courses taken in residence at any accredited collegiate institution. Decisions regarding the acceptability of extension courses taken in institutions other than the University of California rest with the Office of Admissions. Decisions regarding the applicability of such courses toward specific degrees and majors rest with the respective faculties.

College Level Examination Program — Ten quarter units are granted for each area examination passed with a score of 500 or better. Five quarter units are granted for each subject examination covering work appropriate to the University's degrees passed with a score of 500 or better.

Course Credit for Work Taken Elsewhere

The policies above refer only to the unit transferability of courses and are uniformly implemented on all campuses of the University. Thus, courses which are determined by the University of California to be transferable are assured only of being granted elective course credit. The application of transfer work to specific course and major requirements is determined on each campus.

The Irvine campus makes every effort to eliminate all barriers to orderly progress from California community colleges into its own programs. To this end, most community colleges have entered into articulation agreements with UCI so that the specific application of their courses to UCI's University, school, and departmental major requirements may be readily communicated to prospective transfer students. The University of California bulletin, *Prerequisites and Recommended Subjects,* should also be consulted for planning the lower-division course of study for all programs offered on the campuses of the University of California.

University Requirements

Course requirements at UCI are of three types: University requirements, school requirements, and requirements in the departmental major. Courses not specifically applicable to these are considered to be electives. See page 23 for a complete description of these requirements.

(1) Subject A. Among the means of meeting this requirement is the completion of an acceptable four-quarter-unit or three-semester-unit transfer course in English composition with a grade of C or better.

(2) The American History and Institutions requirement may be met by completing in high school one year of U.S. History or one semester of U.S. History and one semester of Civics with a grade of at least C or upon certification by another California collegiate institution.

(3) 6-3-3 Breadth Requirement. In contrast to most University of California campuses, UCI has no *specific* breadth requirement *courses* or areas. Breadth is met, rather, by distributing at least six courses in one school outside the major, and at least three each in two other schools outside the major. This 6-3-3 requirement may be satisfied by any courses appropriate to these schools and may be met at any time during the undergraduate years. Transfer students should not feel that these must necessarily be completed in the lower division. Students from colleges on the semester calendar may fulfill the 6-3-3 requirement by clusters of four courses and two courses, respectively.

Students who transfer from a four-year institution and who have completed the general breadth requirements of that college will be considered to have met the total 6-3-3 breadth requirement of UCI. Students who transfer from a junior college and who have met the general breadth requirements of any campus of the University of California prior to transfer will also be regarded as having met the 6-3-3 breadth requirement. Students who, upon transfer, have not completed whatever breadth requirements may have been in progress for another campus of the University of California, may elect to complete at UCI either that program or the 6-3-3 UCI breadth distribution.

Virtually all courses in the Schools of Biological Sciences, Fine Arts, Humanities, Physical Sciences, and Social Sciences at UCI are applicable to the 6-3-3 breadth requirement. The courses and descriptions listed elsewhere in this catalogue may be used by prospective transfer students as a guide for selecting courses of similar content and purpose in their own institutions. However, it is strongly advised that they consult with their counselors to verify the transferability of such courses and their applicability to the 6-3-3 breadth requirement. No student who has taken a course which is accepted for credit by the Director of Admissions and University Registrar and which has been determined by a junior college as acceptable toward completion of the 6-3-3 distribution shall incur any loss of credit in satisfaction of the requirement.

School Requirements

The undergraduate schools at UCI occasionally impose another level of requirements common to all their majors, in addition to the University requirements and the requirements of the respective major departments. (See p. 25.) Since these school requirements occasionally cross school lines (e.g., physical science requirements for all majors in the School of Biological Sciences), courses taken to fulfill a school requirement may at the same time be applicable toward the University breadth requirement. Also, courses taken to fulfill a departmental major requirement may, at the same time, fulfill a school requirement or the University breadth requirement. (See p. 24.)

Although course equivalencies for the 6-3-3 breadth requirement are liberally interpreted for purposes of transfer, courses to be applied toward school and departmental major requirements must be more precisely equated with UCI courses in unit value and in content. Generally speaking, it is advisable for students to satisfy as fully as possible the requirements of their intended UCI school prior to transfer.

Departmental Major Requirements

Courses to be applied toward departmental major requirements must be more precisely equated with UCI courses in content and purpose than is the case with courses applicable to the 6-3-3 breadth requirement. (See p. 22 and departmental sections.) Prospective transfer students should consult with their counselors as to the applicability of courses toward UCI departmental requirements. The brochure *Prerequisites and Recommended Subjects* may also assist in planning the lower-division preparation for any major in the University of California.

Prospective transfer students should address specific inquiries about their program to the respective schools or departments at UCI. Community colleges wishing to clarify the status of transfer courses should consult with the Office of Relations with Schools at Irvine or at the University campus closest to them.

Additional Policies Relating to Admissions

Rules Governing Residence

Students who have not been legal residents of California for more than one year immediately prior to the opening day of the quarter in which they register are charged, along with other fees, a tuition fee of $500.00 for the quarter.

Legal residence is the combination of *physical presence* in California and the *intention* of making it one's permanent home, coupled with the relinquishment of legal residence in any other state. The student who is within the state primarily for educational purposes does not gain the status of legal resident regardless of the length of his stay in California. In general, the unmarried minor (any person under 21 years) derives legal residence from his father; or from his mother if the father is deceased; or, in the case of divorced parents, from the parent awarded legal custody by the court. *The married woman derives legal residence from her husband from the date of marriage.* If a woman is a nonresident and marries a resident, she has to wait a year before being classified as a resident. (Government Code Section 244 and Education Code Sections 23054, 23055, 23057, 23058, and 23059.)

The attention of the following students is directed to the fact that presence in California for more than one year does not, in itself, entitle them to resident classification: (1) those under 22 whose parents are not California residents; (2) servicemen stationed in California who were not California residents at the time of entry into the military service; (3) alien students who first must qualify for permanent residence status according to the applicable laws of the United States.

Exemption from payment of the nonresident tuition fee is available to the unmarried minor whose natural or adoptive parent is in the active military service of the United States and is stationed in California on the opening day of the quarter for which he registers, or is stationed outside the United States immediately after having been stationed on active duty in California. This waiver is also available to the spouse of a member of the military service of the United States with an active duty station as described above.

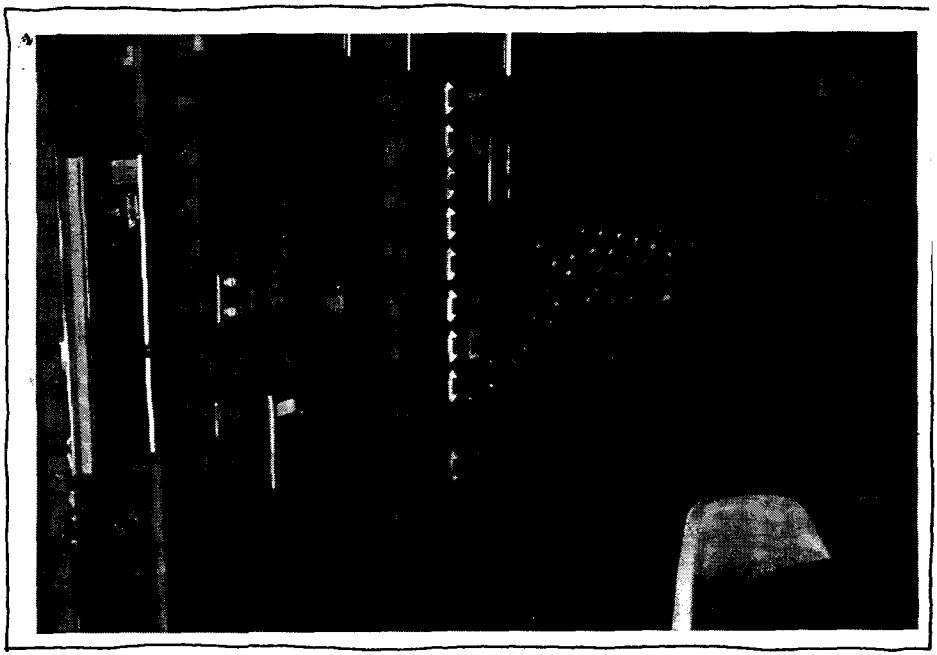
New and returning students are required to fill out a Statement of Legal Residence, a form that is issued at the time of registration. Their status is determined by the Attorney in Residence Matters deputy who is located in the Registrar's Office. Inquiries from prospective students regarding residence requirements for tuition purposes can be made by writing to the Attorney in Residence Matters, 590 University Hall, University of California, Berkeley, California 94720. *No other University personnel are authorized to supply information relative to residence classification.*

Those classified incorrectly as residents are subject to reclassification as nonresidents. If incorrect classification results from false or concealed facts, the student is subject to University discipline and is required to pay all back fees he would have been charged as a nonresident. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters or his deputy. Application for a change in classification with respect to a previous quarter is not received.

Medical and Physical Examinations

New students and students returning to the University after an absence of two or more quarters are required to have a health clearance by the Student Health Service before their enrollment is completed. Students absent from the campus as participants in the University's Education Abroad Program must comply with this requirement upon their return to the campus.

All new students are required to have a completed medical examination performed by their own physician within 90 days of enrollment. In addition, each student must present a certificate verifying successful vaccination against smallpox within three years prior to registration and a report of a tuberculosis skin test and recent tetanus immunization. In a few specialized curricula, students may be required to have additional examination and supplemental immunization which will be performed by the Student Health Service.



Graduate Admissions

Students seeking admission to graduate status on the Irvine campus must hold a Bachelor's Degree or its equivalent from an institution of acceptable standing. The Dean of the Graduate Division and the department of specialization evaluate applications for admission in terms of scholastic qualifications and formal preparation for the graduate field of study.

Application forms for admission to graduate status are available upon request from the Office of Graduate Admissions, University of California, Irvine, California 92664. For applicants residing in the United States, applications must be on file no later than July 1 for the fall quarter 1971, November 1 for winter quarter 1972, and January 1 for spring quarter 1972. Applicants interested in financial support should apply not later than February 1, 1972 for the following year.

The Graduate Division requires *two* complete sets of official records covering all work attempted, together with official evidence of degrees conferred, from all institutions of college level attended, including any campus of the University of California, regardless of length of attendance. To be official, records must bear the Registrar's signature and the seal of the issuing institution and be sent directly from the issuing institution. A summary of credit transferred and recorded on the transcript record issued by the institution granting the degree will not suffice, *except* in the case of graduates of the University of California. *In the absence of official records and official evidence of graduation or degree, registration cannot be permitted.*

One set of transcripts of record and all other official credentials are retained permanently in the files of the Graduate Division for applicants accepted for admission, and they may not be withdrawn and used by students for any purpose. The second set is forwarded to the appropriate department, retained there, and may be used by the student in conferring with departmental advisors.

Each application must be accompanied by a $20.00 application fee in the form of a check, draft, or money order for the exact amount and made payable to The Regents of the University of California. In order to process applications in time for the scheduled registration days, it is necessary that complete and official transcripts be received before the above deadlines. Applications received after these deadlines will be considered only if time and circumstances permit and may be deferred for consideration for the following quarter. In any case the applicant may be liable for the additional late registration fee of $10.00. In cases where students have work in progress by the deadline dates given above, final transcripts covering such work must be received before registration may be permitted. Such applicants will be considered on an individual basis and special late registration dates may be assigned.

A formal notice of admission or denial is sent to each applicant as soon as possible after his application and complete records are received. Therefore, all applicants are advised to await notification of admission from the Graduate Division before making definite plans or arrangements for attending the University.

For further information regarding the Graduate Division please refer to page 291.

This is the machine that took Will's dime.

Academic Procedures & Scholarship Requirements

Each student at the University of California, Irvine will have numerous contacts with the Office of the Registrar. The Registrar's Office should be viewed as a service to make a student's life less complex. The student should refer to the Registrar's Office when faced with problems concerning registration, enrollment, recording of grades, and academic procedures.

The following pages give the student a brief look at the actual mechanics of most of the important functions of the Registrar's Office and the student's relationship to these functions. All information applies to both graduates and undergraduates unless otherwise stated.

Registration

At UCI, computers help the student know as soon as possible just what his status is concerning registration. Each quarter the exact procedures for registration are subject to change, but given below are the basic steps to be followed.

1. Obtain registration packet.
2. Pay fees.
3. Consult academic advisor and plan a tentative class schedule.
4. File completed registration packet and class schedule at the Registrar's Office.

Along with the registration packet, the student will receive specific registration procedures for each quarter.

Enrollment

A student normally enrolls in classes at the time of registration (see step 3 above). Enrollment in classes at UCI is designed to be as flexible as possible. Certain limits, however, are necessary to assure academic regularity and to allow the Registrar's Office as much time as possible to validate the student's tentative record before it becomes final. When planning a schedule at UCI, the student should keep in mind the following factors.

Course Limitations (undergraduate students)

An undergraduate student may take as few as three courses or as many as five courses per quarter. It should be noted that a student cannot complete the 45 classes necessary for graduation by taking three classes every quarter.

If a student wishes to take more than five or less than three courses per quarter, he must have his schedule approved by the dean of his school. A change in course enrollment card can be obtained from the dean's office and must be signed by the student's dean.

Change of Program

During the *first two weeks* after the beginning of a quarter, the student may enroll in additional courses. To do so, the student must obtain a change of course enrollment card from his dean's office and have it signed by his instructor. The student then returns the card to his dean's office. After the second week, no courses may be added or changed without the approval of the dean of the student's school.

To drop a course during the first six weeks of the quarter, it is necessary to obtain the instructor's signature and to file the change of course enrollment card with the dean's office. To drop a course after the sixth week, the dean's approval is needed.

Every student enrolled in a laboratory course in which equipment is issued is responsible for the equipment when dropping a course and will not be permitted to drop until the equipment is accounted for.

The student cannot simply discontinue his attendance in a class; he *must* file a change in course enrollment card. If he fails to do so, he will receive an "F" grade in the class.

Simultaneous Enrollment in Other Institutions

Simultaneous enrollment in regular sessions at another institution or in University Extension while enrolled on the Irvine campus is permitted only when approved by a petition *in advance* by the dean of the student's school. In order to receive credit for classes taken at other institutions, the student *must* have an official transcript sent to the Admissions Office at UCI.

Credit by Examination

An enrolled student in good standing may obtain credit for courses by taking special examinations at stated intervals. Lists of courses offered for Credit by Examination are available from the dean of each school. Some courses are offered for Credit by Examination only on a Pass/Not Pass basis; others are offered on a letter grade basis.

A student may take the examination for a particular course only one time. After receiving the grade, the student may accept it or reject it. For example, if he receives an "F" on the examination, he may choose not to receive credit or a grade. If the student does choose to accept the results of the examination, grades and grade points will be entered on the student's permanent record in the same manner as regular courses of instruction.

A student wishing to take a course by examination must obtain a petition from his dean's office or the Registrar's office and have it signed by the dean of the school offering the course.

All courses in the School of Social Sciences are graded in the same manner as Credit by Examination. Students enroll in classes in Social Sciences as in any other school. The grading procedures will be explained by the instructors of individual classes.

Independent Study

Another class option is available *primarily to upper-division students at UCI.* The option, independent study, allows the student to plan with his instructor the type of class he wishes to take. A reading list and a group of assignments will be decided upon by the student and instructor. Regular course credit will be given for courses taken by independent study. Examples of such courses are Social Science 199, English 188, and Writing 115. Enrollment procedure for independent study courses is the same as for any other class.

Change in Major

If a student wishes to change his major field of study, he must obtain a change of major petition from his dean's office, fill out the form, and have it signed by the dean of the school which he plans to enter. The dean will then return the signed petition to the Registrar's Office.

Double Majors

Students who wish a double major in two different schools must have approval of both deans. Information pertaining to double majors is available at the various deans' offices.

Name Change and Address Change

If a student wishes to change his address or his name as filed with the University, he must obtain the appropriate forms from the Registrar's Office and return the completed forms to the same office.

Grades

It is the Registrar's responsibility to keep student's grades computed and in good order. Each quarter, the Registrar's Office must produce copies of the student's grade records and present them to the student. The Registrar must also have available at all times the official transcript of a student's work at UCI. The student should be aware of all the grades entered on his transcript and agree with their validity. If the student finds a mistake, he should report it immediately to the Registrar's Office and have the mistake corrected.

At the end of each quarter, the student is given a copy of his permanent record. On the copy, the student will find grades for all the quarters he has taken at UCI, a computation of his grade point average at the University of California only, and a list of the University requirements he has completed (Subject A, American History and Institutions, etc.).

It should be noted that all grades given at UCI are *permanent* and *final.* No instructor can change a grade, and the student should not ask for a grade change, regardless of the reason, unless an error has occurred.

Letter Grades

The grades a student receives are in direct relation to the caliber of his class work and are given in accordance with the following standards of the Academic Senate:

A - Excellent (4.0 grade points per unit)

B - Good (3.0 grade points per unit)

C - Average (2.0 grade points per unit)

D - Lowest passing grade (1.0 grade point per unit)

F - Not passing (no grade points given)

I - Incomplete

P - Pass

NP - Not Pass

S - Satisfactory (graduate students only)

U - Unsatisfactory (graduate students only)

NR - Grade not reported by professor

J - Given in place of grade for a continuing course.

Incomplete Grades

"I" or incomplete grades are granted by an instructor to a student according to the conditions stated in Regulation 780 of the Regulations of the Academic Senate. Generally the "I" grade may be given when the student's work is of passing quality, but is incomplete because of circumstances beyond the student's control, and when he has been excused in advance from completing the quarter's work.

There is no time limit concerning when an incomplete must be made up. The time limit can be decided upon by the instructor and the student. To remove an "I" grade, the student should *not* re-enroll in the course but should have his instructor submit a change of grade form to the Registrar's Office.

Effective fall quarter 1968, the incomplete grade is not computed in the student's quarterly grade point average. The incomplete grade is looked upon as simply a course which the student attempted and could not complete. There is an exception to the rule. University of California regulations require a student to have a 2.0 grade point average for all units *attempted* at the University and an accumulation of 180 units or 45 courses. Incompletes, therefore, must be counted when computing the grade point average of a senior preparing to graduate. At such a computation, all incomplete grades must be counted as "F." If the student's overall average is at least a 2.0 including the incomplete grades computed as F's, then the student may graduate. If the incomplete grades computed as F's decrease the student's average below a 2.0, then he may not graduate until he has made up enough incomplete grades to bring his average up to a 2.0.

Pass/Not Pass

At UCI, a Pass/Not Pass option is offered to undergraduate and graduate students. The purpose of the Pass/Not Pass option is to encourage students to enroll in courses *outside* their major fields. Under the Pass/Not Pass system, the student can receive either a Passing grade or a Not Passing grade and his cumulative grade point average will not suffer. If a student receives a "Pass" in a class, he receives course credit for the class. If he receives a "Not Pass," he receives no credit for the class. Below are listed six regulations concerning the use of the Pass/Not Pass option.

1. On the average, only one course per quarter may be taken with the Pass/Not Pass option. The student may not exceed 12 classes taken on a Pass/Not Pass basis, and the number of these classes may not exceed the number of quarters the student has attended UCI.
2. A student who earns a grade of "C" or better will have a Pass/Not Pass grade recorded as "Pass." Units thus earned shall be counted in satisfaction of degree requirements. If the student earns a grade of "D" or "F," his grade shall be recorded as a "Not Pass," and he will receive no credit for the course. In both cases, the student's grade will not be computed into the grade point average.
3. Courses taken under the Pass/Not Pass option count toward the 180 quarter units or 45 courses required for graduation *and* toward meeting the general University breadth requirement. However, such courses may *not* be used to satisfy specific course requirements of the school or department, unless authorized by the dean of the student's school.
4. Changes to or from the Pass/Not Pass option must be made during the enrollment period. No changes can be made after the first two weeks of a quarter without the dean's approval.
5. No student on academic probation may enroll in a course on the Pass/Not Pass option.
6. Graduate students may not use Pass/Not Pass courses to apply toward any degree requirements.

Satisfactory/Unsatisfactory (graduate students only)

Individual study or other individual graduate work undertaken by a graduate student may be evaluated by means of the grades S (Satisfactory) or U (Unsatisfactory). No credit will be allowed for work graded Unsatisfactory. A Satisfactory grade is considered to be a "B" grade or higher.

Not Reported Grades

A student may find an "NR" (Not Reported) grade on his transcripts. The "NR" marking carries no significance in computation of the student's grade point average. It means that the student was on a grading sheet for a certain class and that no grade was turned in. There are many reasons for receiving an "NR". The student should clear up all "NR" markings immediately by contacting his instructor. All "NR" grades turn to "F" grades after one quarter on the student's record.

J Grades

J is a continuing grade for courses taken on a two or three quarter sequence, indicating that the final grade for the individual quarters will not be assigned until the last quarter of the sequence. No credit is given until the student has completed the entire sequence.

Undergraduate Scholarship Requirements

For good standing and for graduation, an undergraduate must earn at least twice as many grade points as the value of course work attempted or, in simpler terms, a 2.0 average. If a student does not maintain a 2.0 grade point average while at the University of California, he falls under one of the following categories.

Probation

An undergraduate student is normally subject to academic probation if at the end of any quarter his grade point average for that quarter, or his total grade point average, is less than a 2.0.

Under most circumstances, a full-time student should meet all degree requirements within 12 quarters of college-level work. The student who is on probation will be removed from probation if he raises his grade point average above 2.0.

Subject to Dismissal

A student whose grade point average falls below a 1.5 for any quarter, or who after one quarter on probation has not achieved a grade point average of 2.0, is subject to dismissal. A student will be allowed to continue on probation if his record indicates that he is likely to achieve the required scholastic standing within a reasonable time. A student may also be subject to dismissal for failing to make reasonable progress toward getting a degree. Ordinarily, a student will not be dismissed for academic reasons until the end of three quarters of work at the University. It should be noted, however, that a student whose academic deficiencies are serious and whose record indicates that he will not apply himself toward the correction of those deficiencies may be dismissed at the end of any quarter.

Probation is *not* a necessary step before dismissal. If a student becomes subject to dismissal, his grades and records will be carefully reviewed by a faculty committee which will consider the student's total performance and decide whether the student shall remain at the University.

In order to transfer from one campus to another in the University of California, a student who has been dismissed or who is on academic probation must obtain the approval of the appropriate faculty or its designated agent into whose jurisdiction he seeks to transfer.

Removal of Deficient Grades

A student may repeat those courses in which he receives a grade of D, F, or Not Pass. Degree credit for a course will be given only once, but the grade assigned at each enrollment in a class shall be permanently recorded. In com-

puting the grade point average of an undergraduate who repeats a course, only the most recently earned grade and grade points will be used for the first sixteen units or four courses repeated. In the case of further repetitions, the grade point average shall be based on all grades assigned and total units attempted. Classes taken for a grade in which the student receives either a D or an F cannot be removed by taking the same class again on a Pass/Not Pass basis. A class in which a Not Pass grade was received can be taken again either for grade credit (A, B, C...) or on the Pass/Not Pass option.

Graduate Scholarship Requirements

The minimum grade point average acceptable for graduate work is a 3.0 or "B." If a student drops below a 3.0 average, notice will be sent to the student's graduate advisor, and appropriate action will follow. If a graduate student's work requires his dismissal, in most cases he will not be dismissed until the end of the spring quarter. All students who have been dismissed or who receive degrees from the University will not be allowed to register again without the approval of the department and the Dean of Graduate Division.

Academic Regulations

The Registrar's Office is responsible for activation of academic rules and regulations, which are decided upon by the Academic Senate and the administration. While the student may never come into contact with certain academic regulations, it is advisable for him to become acquainted with all the various rules governing him during his stay at UCI. The following section contains some of the more important regulations.

Withdrawal from the University

A student withdrawing from the University during the quarter must file notice of withdrawal and turn in his identification card to the Registrar's Office before leaving the campus. In cases of illness or emergency, notice of withdrawal should be made as soon as the student decides not to continue. (A schedule of reimbursements is found on p. 77 under "Fees and Expenses.") If necessary, a student may mail his notice of withdrawal and his identification card to the Registrar's Office.

A student *must* file a notice of withdrawal. If he fails to do so, the student will receive failing grades in all courses and severely jeopardize his standing at the University. If a student has completed a quarter and does not plan to return the following quarter, a withdrawal form is not necessary.

Lapse of Status

A lapse of status is the enforced withdrawal of a student from the University. A lapse of status has nothing to do with the student's personal desires and may be caused by the following:

1. Failure to respond to official notices.
2. Failure to settle financial obligations when due or to make satisfactory arrangements with the Cashier if payment cannot be made.

3. Failure to complete the physical examination.

The student will be notified of the lapse of his status as a University of California, Irvine student. *The notification will be given in ample time to allow the student to deal with the situation*. If the student fails to respond to the notification of his lapse of status, he will be dismissed from the University and will receive no further services from the University.

Upon proof of removal of the reason for the student's lapse of status, a $10.00 reinstatement fee will be required before the student will be allowed to re-enter the University.

Retention of Student Records

The Registrar's Office keeps a record of all academic work for each student. The record is maintained permanently by the Registrar, but other records—those of program changes and petitions of all types—are kept up to a year after their entrance onto the student's record card.

The student should be aware of all changes on his transcript. It is assumed that the student will check his permanent record carefully on a periodic basis. After a period of one year, it is also assumed that the student agrees with and accepts the accuracy of his records, and supporting source documents may be destroyed.

Transcript of Records

A $1.00 fee is charged for each transcript of a student's record from UCI. The application for a transcript to be sent must bear the student's signature. Transcripts can only be released upon a signed request of the student. The student cannot obtain a transcript of records if his status has lapsed or if he has any outstanding bills at the University.

Duplication of Credit

If a student repeats a course or takes a course which is considered a duplication, or if he is required to take a course already completed in order to receive a higher grade, he must follow usual enrollment procedures. A student may receive duplicate credit for courses listed in the catalogue as "May be repeated for credit."

Readmission (undergraduate students)

Readmission is not automatic. A student must file a readmission application at least twelve weeks prior to the quarter in which he wants readmission. However, a student who withdraws during a current quarter and wishes to apply for readmission to the next consecutive quarter may submit his application to the Registrar's Office not later than two weeks before the next quarter begins. A $20.00 application fee must be paid.

We strongly urge students to consider this policy in formulating plans for leaving or returning to UCI. Every effort will be made to readmit UCI students who were in good academic standing at the time of dropping out and who have filed readmission applications.

If a student has been dismissed from the University or if he has left the University while on probation or subject to dismissal, he must apply for readmission in the manner prescribed above. His application, however, will be forwarded to the dean of the school which he hopes to enter. If the dean decides that the student is serious about his academic life, and/or that the student has displayed capability at another academic institution, the student will most likely be allowed readmission to the University.

Leave of Absence (graduate students)

A leave of absence may be granted only if a student has completed a minimum of one quarter with at least a "B" average. To obtain a leave of absence, the student must obtain a leave of absence form from the Graduate Division and have it signed by the appropriate persons. A student may not take a leave of absence for more than one year.

Application for Degree

At the start of a student's senior year, he should file an application for degree at the office of the dean of his school. After he has done so, a degree check will be made to see if the student is close to completing his requirements. The student will be notified of the results of his degree check. The diplomas are usually sent to graduates about 90 days after graduation.

Intercampus Transfer (undergraduate students)

An undergraduate student in good standing can transfer from the UCI campus to other campuses of the University of California. To do so, the student should first check with the Registrar to see which of the campuses are accepting transfers and which majors are being encouraged by each campus. The student then obtains an Intercampus Transfer Application form from the Registrar's Office and files the form with his home campus registrar by the deadline prescribed for the quarter in which the student wishes to transfer. The deadlines are March 1 for fall quarter, September 1 for the winter quarter, and December 1 for the spring quarter. A student may apply for only one campus in any given quarter. A fee of $20.00 is required for all Intercampus Transfer Applications filed with the Registrar's Office.

Intercampus Visitor (undergraduate students)

The Intercampus Visitor Program is being discontinued as of the end of fall quarter 1971.

Intercampus Exchange (graduate students)

A graduate student is offered the opportunity to attend various campuses on an exchange program. The graduate student may become an exchange student with the approval of his advisor and the dean of the graduate division on the campus to be visited. Because the student is not transferred in his actual enrollment, he continues to be considered a graduate student in residence on his home campus. Applications for the Intercampus Exchange Program for graduate students may be obtained from the Graduate Division office on the student's home campus.

Fees & Expenses

Because not all fees are applicable to all students, the students to whom specific fees apply are indicated in the headings. The Board of Regents of the University is now considering changes in these fees and in methods and times of payment. The student should therefore consult the bulletin STUDENT FEES AND DEPOSITS available from the Cashier's Office.

Registration Fee (all students)

The University registration fee is $100 per quarter. *The full fee is required of all students regardless of the number of courses taken.* This fee, which must be paid at the time of registration, covers certain expenses of students for use of athletic and gymnasium facilities and equipment, for certain laboratory fees, and for such consultation, medical advice and hospital care, or dispensary treatment as can be provided by the Student Health Service. No part of this fee is remitted to students who may not desire to make use of all or any of these privileges. The $50 advance deposit on the registration fee, required of new undergraduates, is applied to the full fee when the student registers. The registration fee and all other fees are subject to change by action of The Regents of the University of California. Continuing students are required to pay all outstanding fines and other debts, in full, at the time they pay their registration fee for an upcoming term.

Educational Fee (undergraduate and graduate students)

Beginning with the fall quarter 1970 an Educational Fee has been assessed. Starting fall quarter 1971, the fee will be $100 per quarter for undergraduates and $120 per quarter for graduates.

Nonresident Tuition (all students)

Students who are not classified as legal residents of the State of California are assessed a nonresident tuition of $500 per quarter, payable at registration. (See Rules Regarding Residency Determination, p. 62.)

Associated Students Membership (all students)

In fall 1966, the student body voted to establish a $7 Associated Students Membership fee per quarter to be administered by the Associated Students of the University of California, Irvine to provide social activities, lectures, forums, concerts, and other activities at either a reduced charge, or no charge, to UCI students. By rules of the Associated Students, this fee is required of all students.

Fee Refunds

A student who registered early may cancel his registration and receive full refund of registration fee, educational fee, and tuition fees before the first day of the quarter, less $50 nonrefundable Acceptance of Admission Fee. Student activities fees are not refundable after orientation week begins in the fall quarter, or after instruction begins in winter and spring quarters.

After instruction begins, a withdrawal form is necessary. Students who withdraw from the University during the first five weeks of instruction will receive refunds of registration fee, educational fee, and nonresident fee, less $50 nonrefundable Acceptance of Admission Fee, on the following basis, effective with the first day of instruction:

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

Claims for refund of fees must be presented during the fiscal year (July 1 to June 30) in which the claim is applicable. To obtain a refund, the student must surrender his registration card to the Registrar at the time of withdrawal. Refund checks are issued by the Accounting Office and are generally received about four weeks after the official withdrawal is submitted.

It is extremely important for each student to pay his fees prior to the published deadline each quarter, as official enrollment counts are based on the number of students who have paid fees as of that date. Students who are allowed to pay fees late are not included. If a student does not pay his fees on schedule, he will have to pay a late fee. This late fee cannot be waived except in circumstances where the University is at fault. A student who is allowed to apply late, and is subsequently forced to pay his fees late as a result, is subject to paying the late fee.

Miscellaneous Fees

Undergraduate Acceptance of Admission Fee (nonrefundable in all cases, even when student withdraws subsequent to registration; applied toward University Registration Fee) $50
Application Fee
(includes readmissions and intercampus transfer; nonrefundable) $20
Candidacy for Ph.D. $25
Master's Thesis and Doctoral Dissertation Filing Fee
(for graduate students who need not enroll in classes) $50
Reinstatement Fee $10
Removal of Grade E or I (each petition) $5
Subject A Course $45
Transcript of Records (each) $1

Miscellaneous Fines and Penalties

Breakage: charges are assessed based on actual replacement costs
Changes in Study List after Announced Dates (each petition) $3

Duplicate Diploma	$20
Duplicate Cards from Registration Packet (each petition)	$3
Duplicate Student Identification Card (each petition)	$3
Late Filing of Announcement of Candidacy for B.A., B.S.	$10
Late Filing of Study List	$10
Late Payment of Fees	$10
Late Registration	$10
Returned Check Collection	$5

Estimated Expenses

The following is intended only as a guide in computing the average annual expenses for three quarters of attendance at UCI. (For a quarterly breakdown, divide by three.) Fees are due and payable at the beginning of each quarter.

California Residents

	Under grad.	Grad.	Medical
University Registration Fee	$300	$300	$300
Educational Fee	$300	$360	$360
Associated Students Fee	$21	$21	$21
Room and Board in University Residence Halls	$1265	----	----
Room and Board for Independent Students	----	$1430	$1430
Books and Supplies (Approximate)	$200	$400	$650
Personal Expenses (Laundry, Clothing, Recreation)	$500	$500	$500
Average Annual Expenses	**$2586**	**$3011**	**$3261**

Nonresidents

All Above Fees Apply	$2586	$3011	$3261
Nonresident Tuition	$1500	$1500	$1500
Average Annual Expenses	**$4086**	**$4511**	**$4761**

Schools & Departments

These are really computers

Will and Spot having lunch in the park

School of Biological Sciences

Howard A. Schneiderman
Dean

The School of Biological Sciences, founded by Dean Edward A. Steinhaus, reflects new concepts of biology in both its curriculum and its research programs. The faculty is dedicated to providing each student with the opportunity to avail himself of the principles and ever-increasing knowledge of the facts of biology. The curriculum is designed to meet present and future educational needs of majors and nonmajors. In keeping with the responsibilities of the University, the School encourages vigorous faculty and student research programs. It strongly believes that excellence in research is essential for effective, enthusiastic, and up-to-date teaching.

The School offers majors and nonmajors the opportunity to study man and his environment, the control of development, the nature of learning and memory, the mechanism of gene action, and other central problems of contemporary science. The undergraduate program for majors presents the biological sciences as an integrated area of study. It includes a central Core program, which develops the major concepts of biology, and satellite courses which allow for specialization. This program provides the essential background for subsequent graduate specialization in the biological sciences, including biochemistry, teaching, the health professions, environmental management, marine science, agriculture, and other applied fields. Introductory courses for nonmajors are designed to make the biological sciences meaningful and interesting and to inform intelligent citizens of biological phenomena that affect their daily lives. Graduate courses are offered in all the departments.

The student majoring in biological sciences should understand the tremendous impact biology now exerts upon matters of public policy and society as well as the importance of society's reaction to these discoveries. It is important to the future welfare of mankind that educated men and women appreciate the contributions of the biological sciences to man's intellectual development, material progress, and ethical and aesthetic senses.

Special research resources administered by the School of Biological Sciences include the following: (1) Museum of Systematic Biology, a teaching and research facility, which presently contains material on local populations of fishes, plants, insects, and mammals; (2) Center for Pathobiology, an information unit devoted to the study of abnormal and normal development and the application of the results of such studies to pest control and pollution; (3) The Irvine Arboretum, a botanic garden facility planned to keep records of all material planted on the campus as well as to be used for experimental and teaching purposes; and (4) The San Joaquin Freshwater Marsh Reserve, supporting an undisturbed marsh biota. The School, through the Marine Biology Coordinating

Committee, is developing marine research and teaching facilities. In addition, a marine biological laboratory has been constructed on Santa Catalina Island as a joint universities' project under the administrative direction of the Allan Hancock Foundation of the University of Southern California. See page 13 for other instructional and research facilities.

The School of Biological Sciences welcomes student participation in all of its activities. An exciting and integral part of the School is the Dean's Council, an autonomous student group which provides additional liaison between administration, faculty, and students. Some of its activities include interaction of students and faculty in academic and social functions, evaluation of faculty and courses, initiation and implementation of new courses, motivation programs for high school minority students, conservation awareness programs, and other related areas. Full information on the Council, of which all biological sciences students are members with no fees, cards, or applications, is available in the Biological Sciences Office of Student Affairs in Room 335, Steinhaus Hall.

Students intending to major or go to graduate school in the School of Biological Sciences should obtain a copy of *A Guide to the Biological Sciences* from the Student Affairs Office of the School of Biological Sciences.

Accelerated Combined B.S.-Ph.D. Degree Program

A program has been initiated whereby outstanding students can obtain both their B.S. and Ph.D degrees within six years. This innovation will provide exceptional students with an exceptional program. Some key features are: (1) The students will take liberal arts training continously throughout their undergraduate and graduate years. (2) They will initiate research early in their college careers. (3) Part of their education will be at biological field stations and/or at other campuses of the University of California.

Degrees Offered in the School

Biological Sciences . . . . . B.S., M.S., Ph.D.
with opportunities to specialize in Developmental and Cell Biology, Molecular Biology and Biochemistry, Population and Environmental Biology, and Psychobiology

Of the graduating seniors, approximately 1% will be awarded *summa cum laude*, 3% *magna cum laude*, and 8% *cum laude*. Those students who graduate with an overall grade point average of 3.5 or better while carrying three or more graded courses per quarter for a minimum of six quarters will have their names inscribed on a permanent plaque in Steinhaus Hall.

In addition to the above honors, the School offers courses numbered 199 to students in their junior or senior years. Because the frontiers of biology are so accessible, these 199 courses provide the interested student with a singular opportunity to conduct original research. Each student will submit a paper describing his research early in May of his senior year. At that time he will also present a 10-minute talk with a 5-minute question-and-answer period before an audience of the Honors Committee, his sponsor, all interested faculty, and the other students conducting research that year. On the basis of these and other criteria, the Honors Committee will select certain individuals to receive Honors in the Biological Sciences Seals on their diplomas.

An annual Edward A. Steinhaus Award is given each spring to an outstanding graduate teaching assistant to be chosen by a committee.

Requirements for the Bachelor of Science Degree

University Requirements: See page 23.

School Requirements: Biological Sciences Core Curriculum (101A-B-C-D-E-F-G, 102A-B-C-D-E-F); minimum of three satellite courses (see p. 91); certain physical chemistry or selected engineering courses may substitute for the satellites; Chemistry 1A-B-C; Chemistry 51A-B-C; Humanities 1A-B-C (This covers the English requirements for premedical students); Mathematics 2A-B-C, Physics 3A-B-C or 5A-B-C.

Planning a Program of Study

Biological sciences courses are built upon a base of the physical sciences. Majors, therefore, should take Chemistry 1A-B-C, Mathematics 2A-B-C, and Physics 3A-B-C concurrently with their biology and preferably during their freshman and sophomore years.

Courses in chemistry, physics, or mathematics that are required for a major in the biological sciences may not be taken on a Pass/Not Pass basis.

In realization of the tremendous impact biology is having upon matters of public policy and society in general and the importance of society's reaction to the discoveries being made in the biological sciences, biological sciences students are encouraged to study the social sciences, humanities, and fine arts.

The ability to read literature of science in French, German, and Russian is desirable. The mastery of one or two of these languages in some cases is essential for advanced graduate work.

Premedical students and other students desiring to enter the health sciences should have their programs checked in the Biological Sciences Student Affairs Office, Room 335, Steinhaus Hall. They should also check deadlines for taking the Medical College Aptitude Test or other required tests, which should be taken in the spring of the junior year.

It is possible for a student to graduate with a double major by fulfilling the requirements of any two schools. A double major in Biological Sciences and in Chemistry is recommended for those planning a graduate career in Molecular Biology and Biochemistry. For students interested in Biology and Engineering, it is possible to take a course of study which will give a major in both subjects. This program is intended for students interested in a career in Environmental Management. Details are given under the School of Engineering, page 241.

Students' interests are best served by consulting with the Biological Sciences Student Affairs Office to seek advice on planning their programs.

Suggested Programs

All courses in italics are required of majors; other courses are highly recommended.

OPTIONS AND ADVANTAGES	FRESHMAN	SOPHOMORES	JUNIORS	SENIORS
OPTION A Fast Progress	*Gen. Chem. 1* *Math 2 (Calculus)* **Biol. 101 & 102 A-B-C* *Humanities 1* (8 units) Biol. 2 (Fr. Sem.) (1 unit)	*Org. Chem. 51* *Physics 3 or 5* ***Biol. 101, 102 & Satellites* ***Electives Biol. 55 (Soph. Sem.) (2 units)	*Biol. 101, 102 & Satellites* Phys. Chem. 131 A-B; Biol. 123 Math 170 A-B (Statistics) and ICS 1 (Computer) or Math 3 Biol. 190 (Jr. Sem. - 2 units) Electives	Electives " " "
OPTION B Fast Progress	*Gen. Chem 1* *Math 2 (Calculus)* **Biol. 101 & 102 A-B-C* Biol. 2 (Fr. Sem.) (1 unit) ***Electives	*Org. Chem. 51* *Physics 3 or 5* ***Biol. 101, 102 & Satellites* *Humanities 1* (8 units)	Same as Option A	Same as Option A
OPTION C Fast Progress but Humanities postponed until Junior year	*Gen. Chem. 1* *Math 2 (Calculus)* **Biol. 101 & 102 A-B-C* Biol. 2 (Fr. Sem.) (1 unit)	*Org. Chem. 51* *Physics 3 or 5* ***Biol. 101, 102 & Satellites* Biol. 55 (Soph. Sem.) (2 units) ***Electives	*Humanities 1* *Biol. 101, 102 & Satellites* Math 170 A-B (Statistics) and ICS 1 (Computer) or Math 3 Biol. 190 (Jr. Sem. - 2 units) Electives	Phys. Chem. 131 A-B; Biol. 123 Electives " "
OPTION D Lighter Freshman year	*Gen. Chem. 1* *Math 2 (Calculus)* *Humanities 1* (8 units) Biol. 2 (Fr. Sem.) (1 unit)	*Org. Chem. 51* **Biol. 101 & 102 A-B-C* *Physics 3 or 5* Biol. 55 (Soph. Sem.) (2 units) ***Electives	Same as Option C	*Biol. 101, 102 & Satellites* Phys. Chem. 131 A-B; Biol. 123 Electives

*Biol. Core Lectures 101 A-B-C-D-E-F-G and Core Labs 102 A-B-C-D-E-F required. Each lab course may be taken concurrently or following completion of lecture portion. May be begun in either freshman or sophomore year. Completion of Org. Chem. 51B required before taking Biol. 101F and G. Junior college transfers, who have successfully completed one year of general biology for majors, may be exempted from Biol. 101 A-B-C if they so desire. Recommended satellite courses for these students are 148 *Vertebrate Embryology* and 137 *Genetics*.

**Three biological sciences satellite courses are required. Physical Chemistry 131A-B-C or certain engineering courses may be counted as satellites. As an alternative to Chemistry 131C, Biology 123 may be taken. This sequence will provide a one year course in physical chemistry that is particularly suitable for biology majors.

***Electives should be chosen with a view to fulfilling UCI's breadth requirements. Premedical, predental, and other paramedical students should choose electives in psychology, possible foreign language, physical chemistry, or other specific courses recommended by graduate and medical schools. Students planning a career in elementary or secondary teaching may choose electives among education courses in their junior and senior years.

Graduate Programs

Departments of the School of Biological Sciences offer programs in a wide variety of fields ranging across the spectrum of the biological sciences. The organization of the departments within the School encourages an interdisciplinary approach to scientific problems.

Graduate programs are administered by departments for the School of Biological Sciences. Applications for admission for graduate study are evaluated both by the Graduate Division and by the department to which the student has applied on the basis of letters of recommendation, Graduate Record Examination scores, grades, and other qualifications of the applicant.

Programs leading to the degrees of Master of Sciences (M.S.) and Doctor of Philosophy (Ph.D.) in the Biological Sciences are offered in all the departments. Students are expected to maintain a "B" average at all times, attain the Master's Degree in two years, and attain the Ph.D. in four years. A Master's Degree, however, is not a prerequisite for the Ph.D. degree.

While most training takes place within one of the four departments, full facilities and curricular offerings are available to all graduate students in all departments of the biological sciences. Interdisciplinary study and research are encouraged.

Each new student is assigned a faculty member as his temporary advisor. During the first part of the initial year of graduate work, the graduate advisor or a small committee in consultation with the student plans an academic program. Faculty advisors are changed if the specific interests of the student change. Students are encouraged to consult with other faculty members with regard to their research and academic interests.

In addition to their own research and the seminars and colloquia required by the individual departments, all graduate students receive guided teaching experience. During their graduate training all students will serve some time as teacher apprentices under the direction of advanced teaching assistants and faculty. Advanced graduate students may work closely with faculty in the planning and execution of the teaching program. The amount and exact nature of the teaching experience varies with the department.

Financial assistance is considered an important aspect of graduate training, relieving the need to seek outside employment and permitting maximum concentration of effort toward graduate study. Support is available through teaching and research assistantships, fellowships, and traineeships.

Graduate education is a highly personal and individual matter. Graduate students are encouraged to pursue their own individual interests and creative abilities. Thus it is not possible to prescribe a particular course schedule or time sequence of events which will meet the needs or interests of all students. The most important requirements for the attainment of the Ph.D. degree are for a student to develop the ability to make original contributions to scientific knowledge and to develop the ability and desire to transmit that knowledge. Although the departmental graduate programs vary in detail within the departments of the School, the outline given here serves as a general guide.

Master of Arts in Teaching of Biology

This new program, pending final approval, is primarily for biology teachers or those working for their credential. It aims to provide them with a program of modern, relevant coursework and curricular research which will enable them to teach up-to-date, advanced high school and junior college courses. The program will be structured so that the working teacher can take courses in evenings, weekends, and summers and could complete the requirements in two summer sessions and one academic year.

Master of Science in the Biological Sciences

A reading knowledge of one foreign language, usually French, German, or Russian is required in several programs in the School of Biological Sciences.

Plan I: Thesis Plan — The student completes seven upper-division or graduate courses including a minimum of five nonresearch courses. The student then presents a thesis based upon research done while in the School.

Plan II: Comprehensive Examination Plan — The student completes a minimum of nine upper-division and graduate courses. At least five must be graduate courses (numbered 200-299) in the student's field of specialization. This program is terminated with a comprehensive final examination.

Doctor of Philosophy in the Biological Sciences

Students planning a Ph.D. degree are normally encouraged to bypass the M.S. degree. Competence in one or two foreign languages, usually German, French, or Russian, is required in several programs in the School. On the recommendation of the student's advisor, with approval of the departmental chairman, other languages or training in other special skills may be substituted for one of the language requirements. For specific graduate programs, contact the graduate advisors of the various departments.

First Level of Competence — The student attains this Level by completing oral or written examinations at the discretion of the department.

Second Level of Competence — This Level is attained by passing an examination dealing with the student's particular interests. A committee for the purpose of administering this examination is appointed by the Dean of the Graduate Division.

Once this examination is completed, the student is advanced to candidacy for the degree and is considered to have formally begun his dissertation research. The student submits a dissertation on this research and defends it at an oral examination during the final year of graduate study.

School of Biological Sciences Faculty

Joseph Arditti, Ph.D. University of Southern California, *Assistant Professor of Biological Sciences*

* Edward R. Arquilla, M.D., Ph.D. Western Reserve University, *Professor of Pathology*

Peter R. Atsatt, Ph.D. University of California, Los Angeles, *Assistant Professor of Biological Sciences*

Ernest A. Ball, Ph.D. University of California, Berkeley, *Professor of Biological Sciences*

Hans R. Bode, Ph.D. Yale University, *Lecturer in Biological Sciences*

Arthur S. Boughey, Ph.D. Edinburgh University, *Professor of Biological Sciences*

Peter J. Bryant, Ph.D. University of Sussex, *Assistant Professor in Biological Sciences*

Susan V. Bryant, Ph.D. University of London, *Assistant Professor of Biological Sciences*

Richard D. Campbell, Ph.D. The Rockefeller University, *Associate Professor of Biological Sciences*

* Dennis D. Cunningham, Ph.D. University of Chicago, *Assistant Professor of Microbiology*

Carl Cotman, Ph.D. Indiana University, *Assistant Professor of Psychobiology*

Peter S. Dixon, Ph.D. University of Manchester, *Chairman of the Department of Population and Environmental Biology, Director of Museum of Systematic Biology, Director of The Irvine Arboretum, and Professor of Biological Sciences*

Donald E. Fosket, Ph.D. University of Idaho, *Assistant Professor of Biological Sciences*

Ralph W. Gerard, M.D. Rush Medical, Ph.D. University of Chicago, D.Sc., LL.D., Litt.D., *Professor Emeritus of Biological Sciences and Advisor to the Vice Chancellor—Academic Affairs*

* Roland Giolli, Ph.D. University of California, Berkeley, *Assistant Professor of Psychobiology*

* Albert Globus, M.D. Northwestern University, *Assistant Professor of Psychobiology*

Charles N. Gordon, Ph.D. New York University, *Assistant Professor of Biochemistry*

* Gale A. Granger, Ph.D. University of Washington, *Associate Professor of Biochemistry*

* Wesley Hatfield, Ph.D. Purdue University, *Assistant Professor of Microbiology*

Patrick L. Healey, Ph.D. University of California, Berkeley, *Associate Dean in Charge of Undergraduate Instruction and Assistant Professor of Biological Sciences*

George L. Hunt, Ph.D. Harvard University, *Assistant Professor of Biological Sciences*

* Kenneth H. Ibsen, Ph.D. University of California, Los Angeles, *Assistant Professor of Biochemistry*

* E. Marshall Johnson, Ph.D. University of California, Berkeley, *Professor of Anatomical Sciences*

Robert K. Josephson, Ph.D. University of California, Los Angeles, *Professor of Biological Sciences and Psychobiology*

Keith E. Justice, Ph.D. University of Arizona, *Associate Professor of Biological Sciences and Acting Dean of the Graduate Division*

Harold Koopowitz, Ph.D. University of California, Los Angeles, *Assistant Professor of Biological Sciences*

* Stuart M. Krassner, Sc.D. The Johns Hopkins University, *Vice Chairman of Department of Developmental and Cell Biology and Associate Professor of Biological Sciences*

Howard M. Lenhoff, Ph.D. The Johns Hopkins University, *Associate Dean of the School, Professor of Biological Sciences, and Coordinator of Marine Biology Program*

Mark M. Littler, Ph.D. University of Hawaii, *Assistant Professor of Biological Sciences*

Gary Stephen Lynch, Ph.D. Princeton University, *Assistant Professor of Psychobiology*

Richard E. MacMillen, Ph.D. University of California, Los Angeles, *Associate Professor of Biological Sciences*

Gordon S. Marsh, B.S. University of California, Berkeley, *Lecturer in Biological Sciences*

* James L. McGaugh, Ph.D. University of California, Berkeley, *Chairman of Department of Psychobiology and Professor of Psychobiology*

* Calvin S. McLaughlin, Ph.D. Massachusetts Institute of Technology, *Associate Professor of Biochemistry*

*Kivie Moldave, Ph.D. University of Southern California, *Professor of Biochemistry*

* Harris S. Moyed, Ph.D. University of Pennsylvania, *Professor of Microbiology*

* Ernest P. Noble, Ph.D. Oregon State University, M.D. Case Western Reserve, *Associate Professor of Psychobiology*

* Donald J. Raidt, Ph.D. University of Kansas, *Assistant Professor of Microbiology*
Philip W. Rundel, Ph.D. Duke University, *Assistant Professor of Biological Sciences*
Roger W. Russell, Ph.D. University of Virginia, *Professor of Psychobiology and Vice Chancellor—Academic Affairs*
Howard A. Schneiderman, Ph.D. Harvard University, *Dean of the School of Biological Sciences, Chairman of the Department of Developmental and Cell Biology, Director of Center for Pathobiology, and Professor of Biological Sciences*
Gerold A. Schubiger, Ph.D. University of Zurich, *Lecturer in Biological Sciences*
Roger W. Seapy, Ph.D. University of Southern California, *Assistant Professor of Biological Sciences*
* Wendell M. Stanley, Jr., Ph.D. University of Wisconsin, *Associate Professor of Biochemistry*
Grover C. Stephens, Ph.D. Northwestern University, *Professor of Biological Sciences*
* Paul S. Sypherd, Ph.D. Yale University, *Associate Professor of Microbiology*
Irwin Tessman, Ph.D. Yale University, *Professor of Genetics*
Krishna K. Tewari, Ph.D. Lucknow University, *Associate Professor of Biochemistry*
Timothy J. Teyler, Ph.D. University of Southern California, *Lecturer in Psychobiology*
Richard F. Thompson, Ph.D. University of Wisconsin, *Professor of Psychobiology*
Marcel Verzeano, M.D. University of Pisa Medical School, *Professor of Psychobiology*
Edward K. Wagner, Ph.D. Massachusetts Institute of Technology, *Assistant Professor of Virology*
* Robert C. Warner, Ph.D. New York University, *Chairman of Department of Molecular Biology and Biochemistry and Professor of Biochemistry*
Norman M. Weinberger, Ph.D. Western Reserve University, *Associate Professor of Psychobiology*
Richard E. Whalen, Ph.D. Yale University, *Professor of Psychobiology*
* Clifford A. Woolfolk, Ph.D. University of Washington, *Associate Professor of Microbiology*
* Daniel L. Wulff, Ph.D. California Institute of Technology, *Associate Professor of Biochemistry*

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* Joint appointments with UCI-California College of Medicine

Undergraduate Courses in Biological Sciences

Courses for Nonmajors Only

(Nonmajors may also take other courses for which they have the prerequisites.)

1A-B-C Introductory General Biology
Lecture and laboratory. Introduces students to the general framework of biology and to its underlying philosophy, with special attention to its impact on human affairs. Topics covered are diversity of life, anatomy and physiology of selected organisms,

genetics and development, biological regulation, evolution, and ecosystems.

1A (1) F
The fundamental rules of life; evolution; genetics.

1B (1) W
Organization and awareness; physiology and anatomy. Prerequisite: Biological Sciences 1A.

1C (1) S
Ecosystems; ageing and disease. Prerequisite: Biological Sciences 1B.

10 Introduction to Molecular Biology and Biochemistry (1) W
Lecture. Structure and function of the cell. Emphasizes the genetic determination and control of cellular properties and brings in samples from human genetics where possible. Cellular differentiation, specialized cell functions, and abnormal cells such as tumors, virus-infected cells, and bacterial diseases.

11 Populations and Environments (1) S
Lecture. An introduction to Population and Environmental Biology.

15 Introduction to Psychobiology (1) F
Lecture. An introduction to the biological bases of behavior, including an analysis of the nervous system, and problems of instinct, learning, memory, motivation, and arousal. Prerequisite: Introductory psychology or biology.

Courses for Both Majors and Nonmajors

(Nonmajors may also take other courses for which they have the prerequisites; e.g. Biol. Sci. 185 Field Ornithology.)

40 Population: The Vital Revolution (1) F, W, S
Lecture and discussion. Crucial aspects of the population explosion, pollution, food production and distribution, birth control, and vital ecological systems. Emphasis placed on sociological, political, and ethical significance.

46 Problems in Population Biology (1) W
Lecture and seminar. Examination in depth of a number of selected areas in ecology. The stability of ecosystems, species diversity, and population regulation will be studied, among other topics. Students will be expected to prepare summaries of the literature for class presentation. Prerequisite: Consent of instructor.

60 Horticultural Sciences (1) F, S
Lecture, laboratory, field. Theory and practice of plant culture. Basic aspects of plant structure and function, soil science, plant pathology, plant pests and irrigation, and the applied aspects of horticulture. Several sessions of the lab will be devoted to practical plant cultivation in a garden plot.

61 Horticultural Sciences Field (½) F, W, S, Summer
Continuation of field work begun in previous Quarter. Prerequisite: Completion of Biological Sciences 60.

67 Biology of Seed Plants (1) W
Lecture and demonstration. Flowering plants will be considered in terms of their structure and function. These will be related to the roles seed plants play in ecology and human needs.

71 Introduction to Human Physiology (1) Summer
Lecture. An introduction to the study of organ systems in the animal kingdom with emphasis on mammalian physiology.

108 Co-Core—Special Topics in Biological Sciences (1) F, W, S
Lectures by eminent scientists and discussions on subjects relating to the basic current issues in biological sciences. Topics will vary from year to year.

182 Human Reproduction and Sexual Behavior (1) Summer
Lecture. Consideration of human anatomy, physiology, and behavior as related to sexual reproduction, including discussion of fertility, pregnancy, childbirth, and birth

control. Consideration will also be given to homosexuality, venereal diseases, sex education, sexual intercourse and response.

184 Biology and Public Policy (1) S
Lecture and discussion. The relation between biology and biological scientists and the formulation and execution of public policies. Topics such as population, delivery of health care, pollution, will be discussed as specific examples after a general introduction to the subject. Prerequisite: one year of biology or one year of social science or permission of instructor.

Core Curriculum

Biological Sciences Lectures 101A-B-C-D-E-F-G and Laboratories 102A-B-C-D-E-F required of all biological sciences majors. Exception: Junior college transfers who have successfully completed one year of general biology for majors may be exempted from 101 and 102A-B-C if they so desire. Lectures: Three one-hour per week. Laboratories: One three-hour per week. Each Core lab may be taken concurrently or following completion of lecture portion.

101A Evolutionary Biology (1) F
Lecture. An introduction to the diversity of plant and animal life and the origin of this diversity. Prerequisite: Concurrent enrollment in or completion of Chemistry 1A-B-C.

101B (formerly 100A) **Cell Structure and Function** (1) W
Introduction to cell structure and function: cell ultrastructure, protein chemistry, enzymes, metabolism, photosynthesis, muscle contraction, permeability, membranes, and molecular genetics. Prerequisite: Concurrent enrollment in or completion of Chemistry 1A-B-C.

101C (formerly 100B) **Developmental Biology and Organ Physiology** (1) S
Lecture. Mechanisms and concepts of development, organization of the basic body plan in animals, and processes of growth and differentiation in plants. Analysis of the origin, differentiation, and adult structure of various organ systems. Reproductive physiology of vertebrates. Homeostasis in physiological systems with emphasis on whole organ physiology and coordination. Systems to be discussed include temperature control, osmoregulation digestion, muscle physiology. Prerequisite: Concurrent enrollment in or completion of Chemistry 1A-B-C.

101D (formerly 100C) **Psychobiology** (1) F
Lecture. Neurological bases of behavior: aspects of the physiology, chemistry, anatomy, and evolution of the mammalian central nervous system, including man, related to basic behavioral processes such as sleep and arousal, learning and memory, perception, and motivational states. Prerequisite: Concurrent enrollment in or completion of Chemistry 1A-B-C.

101E (formerly 100D) **Genetics, Evolution, and Ecology** (1) F
Lecture. Fundamental concepts of genetics, evolution, and ecology integrated at several levels of organization. Consideration of Mendelian inheritance and population genetics will provide a basis for understanding the evolutionary significance of observed interactions and adaptations of individuals, populations, species, and communities with their physical and biotic environment. Prerequisite: Concurrent enrollment in or completion of Chemistry 1A-B-C.

101F (formerly 100E) **Biochemistry** (1) W

101G (formerly 100F) **Molecular Biology** (1) S
Lectures. These two quarters of the Core form a continuous sequence covering modern biochemistry and molecular biology. The following topics will be emphasized: Structure and properties of proteins as the basis for their participation as enzymes in biochemical reactions; the sequences of these reactions that constitute the major biochemical pathways and the mechanisms for their control; biochemistry and replication of nucleic acids; molecular genetics; protein biosynthesis; genetic code;

regulation of expression of genetic information. Prerequisite for 101F: Chemistry 51B. Prerequisite for 101G: Biological Sciences 101F.

102A Evolutionary Biology Laboratory (¼)
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101A.

102B Cell Structure and Function Laboratory (¼)
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101B.

102C Developmental Biology and Organ Physiology Laboratory (¼)
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101C.

102D Psychobiology Laboratory (¼)
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101D.

102E Genetics, Evolution, and Ecology Laboratory (¼)
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101E.

102F Biochemistry Laboratory (¼)
Experiments on the properties of enzymes and on the culture and isolation of mutants of micro-organisms. Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101F.

102G Molecular Biology Laboratory (¼)
Experiments on the enzymatic synthesis of polynucleotides and their use as messengers in protein biosynthesis to demonstrate the nature of the genetic code. This laboratory is elective and is not a required part of the Core. Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101G.

Satellite Courses

Minimum of three required of all majors. These courses amplify major biological sciences areas covered in the Core courses.

***120 Microbial Genetics** (1) F
Lecture. A consideration of genetics at the molecular and cellular level. Particular emphasis will be placed on microbial genetics as model molecular systems Prerequisite: Biological Sciences 101F.

121 Immunology (1) F
Lecture. The following general topics will be considered: (a) host immune response with regard to bacterial viral, tumors, and transplantation immunity, (b) the structure and function of antibody molecules, (c) important current theories, i.e., antibody formation, oncogenesis, tolerance, etc. Prerequisite: Biological Sciences 101F.

122 General Microbiology (1¼) S
Lecture, laboratory, discussion. Lectures held in laboratory background and integrated with experiments in progress. Comparative metabolism of small molecules and cell structure and relationship to microbial classification. Macromolecule synthesis and regulation, sporulation, cell division, growth, and effect of antibiotics. Prerequisite: Biological Sciences 101F.

123 Biophysical Chemistry (1) S
Lecture. Physical chemistry of macromolecules. Theory and application of techniques for investigating the size, conformation, structure, and solution properties of proteins and nucleic acids. Other biological problems will be examined from the physical chemical approach. This course is planned as a continuation of Chemistry 131A-B to form a one-year physical chemistry course for biology majors. Prerequisite: Chemistry 131B.

124 Virology (1) F
Lecture. Consideration will be given to the infective cycle, growth, reproduction, and host interrelationships of animal viruses. The ways in which animal viruses can be

*Not offered 1971

used to study basic problems in molecular biology will be emphasized. Prerequisite: completion of Biological Sciences Core; genetics is recommended.

124L Virology Laboratory (¼) F
A selected few students will be chosen to participate in the laboratory portion of Biological Sciences 124.

125 Biochemical Methodology (1¼) F
Lectures and demonstrations on the principles, use, theory, and limitations of certain methods employed in molecular biology. Emphasis will be placed on centrifugation, radioactivity measurement and methodology, fractionation methods, particularly column chromatography. Prerequisites: General biochemistry equivalent to Biological Sciences 101F and 101G; physical chemistry highly desirable.

126A-B Biochemistry (1-1) F, W
Lecture. Structure and function of proteins. Basic aspects of enzymes as proteins including kinetics, allosteric mechanisms, relation of primary and subunit structure to catalytic properties. Metabolic mechanisms in cells with special attention to control mechanisms and application of organic reaction mechanism theory. Structure and function of nucleic acids. Biosynthesis of macromolecules. Prerequisites: Biology 101F and 101G; organic chemistry; physical chemistry is desirable.

128 Molecular Genetics (1) S
Lecture. Molecular genetics; coding; control mechanisms in replication, transcription, and translation. Prerequisites: Biological Sciences 126A-B or general background in biological sciences and physical chemistry.

129 Biogenesis of Cell Organelles (1) S
Lecture. Intensive study of various cell structures such as nuclei, chloroplasts, mitochondria, ribosomes, and membranes in an attempt to correlate structure and function at the various levels of cellular organization. Differentiation, development, and replication of cell particles. Prerequisites: Biochemistry equivalent to Biological Sciences 101F and 101G.

135 Physical Chemical Aspects of Biological Function (1) W
Principles of physical chemistry for students of biology. Previous physical chemistry is not required. Topics discussed will include acid-base chemistry, kinetics, solution thermodynamics, electrochemistry, diffusion processes, and membrane phenomena. Prerequisite: Concurrent enrollment in or completion of Biological Sciences 101F.

136 Developmental Biology (1) F
Lecture. Genic, environmental, and biochemical aspects of animal and plant development. An analysis of polarity, symmetry, differentation, regeneration, cell movements, hormone activity, genic control, and abnormal growth in the development of plants and animals. Prerequisites: Biological Sciences 101B-C-D.

136L Developmental Biology Laboratory (¼) F
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 136.

137 Genetics (1) W
Basic course of lectures in genetics, cytogenetics, and control of genic activity in higher organisms including man. Prerequisite: Biological Sciences 101D.

138A-B-C Comparative Organismic Physiology (1-1-1) F, W, S
A three-quarter satellite sequence in the comparative physiology of animals and plants. Three one-hour lectures, one three-hour lab per week. Prerequisites: Chemistry 51C. Biological Sciences 101C. Need not be taken in sequence.

138A (1) F
Maintenance aspects of physiology: water balance; feeding and digestion, metabolism; respiration and circulation.

138B (1) W
Operational aspects of physiology: electrogenesis; nerve and muscle physiology; ciliary and ameboid movement; turgor movements and sensory physiology.

138C (1) S
Hormonal and autotrophic aspects of physiology: hormones; environmental stimuli; photosynthesis and translocation.

139 Cell Development (1) S of even years
Lectures and demonstrations. Intensive analysis of subcellular events which control cellular differentiation and organism development. Prerequisite: Biological Sciences 136, 137, or 144.

140 Principles of Growth (1) F of even years
Growth and morphogenesis in plants and animals. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

141 Developmental Genetics (1) F of odd years
Genetic aspects of developmental processes. Prerequisite: Biological Sciences 136, 137, 144 *or consent of instructor.*

142 Regulatory Mechanisms in Development (1) W
Lectures and discussion of molecular mechanisms in the control of development. Emphasis will be placed on cell differentiation. Prerequisite: Biological Sciences 136 or consent of instructor.

143 Symbiosis (1) S *of odd years*
Lecture and laboratory. Introduction to the variety of symbiotic relations ranging from parasitism to mutualism. Prerequisite: Biological Sciences 101D or consent of instructor.

144 Cell Biology (1) S
Lecture course in ultrastructure, function and structure of cellular organelles, relationships between nucleus and cytoplasm. Prerequisite: Biological Sciences 101B.

145 Principles of Regeneration (1) S of odd years
Problems concerning the developmental restoration of body parts in invertebrate and vertebrate animals. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

146 Problems in Plant Development (1) W
Basic problems in the molecular, genetic, and morphogenetic control of plant development. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

147 Plant Morphogenesis (1) F
Utilization of current literature, with demonstrations of the origins, micro and ultrastructure development of the cell, cell wall, parenchyma, collenchyma, meristems, epidermis, selerenchyma, xylem, phloem, stem, leaf, root, periderm, abscission, flower, fruit, seed, latificers. Theoretical considerations of effects of genic and environmental factors in development will be stressed. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

148 Vertebrate Embryology (1) W
Lecture and laboratory. Introduction to the study of animal development through organogenesis with emphasis on the vertebrates. Prerequisite: Introductory course in biological sciences.

149 Insect Development (1) S
Lecture. Insects discussed as providing ideal experimental situations in which to analyze major problems of developmental biology, including genetic control mechanisms, the control of determination and differentiation, pattern formation, hormone action, etc. By focusing on a single group of organisms, the interrelationships between these problems can be explored in depth. Prerequisite: Consent of instructor.

155 Seminar in Psychobiology (1) F, W, S
A consideration of selected current research problems. Students will prepare and present papers. Prerequisites: Biological Sciences 15, 101D, knowledge of neuroanatomy, or any psychobiology satellite course, upper-division standing, and consent of instructor.

156 Motivation (1) W of even years
Lecture, discussion. Neurological and biological origins of motivational states and behavioral responses appropriate to them. Emphasis on recent research linking limbic system, hypothalamus, and brain-stem reticular formation to various types of "motivated" behavior, e.g., feeding, drinking, fighting, generalized excitation. Prerequisite: College-level course in biological sciences with some knowledge of the nervous system.

157 Animal Behavior (1) S of odd years
Lecture, discussion. An analysis of the genetic and experimental determinants of animal behavior. Prerequisite: Biological Sciences 15 or 101D.

158 Learning and Memory (1) F of even years
Lecture, discussion. A consideration of basic issues concerning the nature of behavioral plasticity and information storage and their neural substrates. Prerequisite: Biological Sciences 15 or 101D.

159 Arousal and Attention (1) W of odd years
Lecture, discussion. A consideration of the behavioral characteristics and neural bases of sleep, wakefulness, and attention. Prerequisite: Biological Sciences 101D.

160 General Neurophysiology (1) S
Lecture, discussion. An introduction to the basic functioning of the nervous system emphasizing systems in the mammalian CNS. Prerequisites: Biological Sciences 101D, one year of calculus, one year of physics.

161 Chemistry-Physiology of Neurons (1) W
Lecture, discussion. Biochemistry of neuron function. Topics will include synapse chemistry, RNA and protein metabolism, and the relationship of metabolism to nerve activity. Discussion will relate chemical concepts to behavioral functions such as learning, memory, and mood. Prerequisites: Organic chemistry and Biological Sciences 101F.

162 Advanced Neurochemistry (1) W of odd years
Lecture and laboratory. Deals with new concepts and current literature in the developing areas of neurochemistry. Prerequisite: Biological Sciences 161 or consent of instructor.

163 Psychoneuroendocrinology (1) S of even years
Lecture, discussion. Will introduce students to materials showing that hormones are involved in neural development and mature function and behavior and that behavior is involved in the control of hormonal secretions. Prerequisite: Biological Sciences 101D.

164 Neuroanatomy (1) F
A series of lectures accompanied by a selected number of demonstrations. The mammalian central nervous system will serve as the model for study, but comparisons will be made with non-mammalian vertebrates where appropriate. First the development, the cell constituents, and the gross organization of the system will be considered so as to acquaint the student with the basic structural organization of the mammalian central nervous system. After this, the central pathways and nuclear centers associated with the functional divisions of the nervous system will be identified and discussed. Prerequisite: Biological Sciences 101D.

165 Introduction to Population and Environmental Biology (1) W
Lecture. Introduction to the relationships of plants and animals to their environment. Integration of ecological problems will be discussed at the level of the individual, the population, the community, and the ecosystem. Special attention will be given to the relevance of the basic foundations of ecology to problems of overpopulation and deteriorating environmental quality. Prerequisites: Concurrent enrollment in Biological Sciences 101 Core for majors; consent of instructor for nonmajors.

166 Human Ecology (1) W
Lecture, discussion, seminar. Multi-media course. Consideration of such demographic features as birth rate, death rate, carrying capacity, intrinsic rate of increase.

Will encompass not only the effect of human populations on their environment, but also of the environment on human populations. Prerequisite: Biol. Sci. 101E or consent of instructor.

167 Field Botany (1) S
Lecture, laboratory, field. A taxonomic survey of selected plant families, including the role of floral biology and agencies of pollination in angiosperm evolution. Each student will choose and complete a short research problem, normally one that is complementary to the topics given in lecture. Prerequisites: Biological Sciences 101E and consent of instructor.

168 Vertebrate Biology (1) W
Lecture, laboratory, field. A survey of vertebrate phylogeny, ecology, and natural history. Particular emphasis will be placed on the adaptations of local terrestrial vertebrates to their environment. Prerequisite: Biological Sciences 101E or consent of instructor.

169A Marine Ecology (1) F
Lecture. Fundamental concepts of marine ecology. Physical and chemical factors, current systems and water masses, trophic ecology, distributions of organisms, survey of pelagic and benthic communities. Prerequisite: completion of or concurrent enrollment in Biological Sciences 101E.

169B Field Marine Ecology (1) W of odd years
Field and laboratory. A survey of benthic and pelagic communities, emphasizing quantitative field and lab techniques. The biotic structure of, adaptations to, and species interactions within these communities will be studied. Each student will devise, conduct, and report on a brief research problem. Prerequisites: Biological Sciences 169A and 180A-B.

170 Evolutionary Processes (1) W
Lecture. An examination of the causes and effects of genetic variation in populations of both haploid and diploid organisms. Mechanisms that control rates of genetic change are emphasized. Topics include recombination, extrachromosomal inheritance, chromosomal reorganization, breeding systems, polyploidy, developmental canalization, racial variation, speciation, hybridization, mimicry, and co-evolution. Prerequisite: Biological Sciences 101E.

171 Vegetation and Ecosystem Dynamics (1) F
Lecture, field. An introduction to major vegetation types of the world and the dynamics of the ecosystems of which they are a part. Particular emphasis will be placed on community ecosystem dynamics including aspects of mineral cycling, water relations, climatology, and biological interactions. The role of these factors within dominant ecosystems of the world today will be analyzed. Major emphasis will be given to plant communities. Students will be expected to participate in weekend field trips. A research paper is required. Prerequisites: completion of or concurrent enrollment in Biological Sciences 101E and consent of instructor.

172 Physiological Plant Ecology (1) W of odd years.
Lecture, field. An examination of the functional response of individual plants and plant communities to their environment. Major emphasis will be given to photosynthetic response and plant water relations. Other topics for consideration will include photoperiodism, vernalization, dormancy, heat exchange by leaves, carbohydrate cycles, germination, and allelopathic interactions. A research paper is required. Prerequisites: Biological Sciences 101E and consent of instructor; a course in plant physiology is strongly recommended.

173 Physiological Animal Ecology (1) S
Lecture, field. An examination of the functional means by which vertebrates cope with their environments. Particular emphasis will be placed on the roles of osmoregulation, thermoregulation, and energy metabolism in the lives of semi-desert and desert-dwelling tetrapods. Prerequisites: Biological Sciences 101E and consent of instructor.

174 Behavioral Ecology (1) F
Lecture and laboratory. Consideration of animal behavior as an evolutionary solution to problems encountered during an animal's life cycle. Includes a broad comparative approach to communication, habitat selection, and food finding.

175 Phycology (1) W
Lecture and laboratory. A survey of the structure, reproduction, and life histories of the algae, both freshwater and marine. Introduction to techniques involved in the culture and cytological investigation of algal material. Prerequisite: Biological Sciences 101E or consent of instructor.

176 Phytoplankton Biology (1) S
Lecture, laboratory, field. The systematics and autecology, including the general physiology and growth requirements, of the planktonic algae are treated. The laboratory work involves identification procedures, use of taxonomic literature and the development of manipulatory skill in evaluating phytoplankton populations. Prerequisites: Biological Sciences 169A and 175 or consent of instructor.

177 General Entomology (1) S
Lecture, laboratory, field. Introduction to insect structure, function, development and classification. Particular emphasis will be placed on natural history, environmental associations, and relationships to man. Field trips and a collection will be required. Prerequisite: consent of instructor.

178 Marine Productivity (1) F
Lecture. Emphasizes rates of primary production in marine, estuarine, and freshwater environments. Productivity is also dealt with at the levels of herbivores, carnivores and decomposers. Measurement methods are expanded upon and demonstrated with the interpretation of measurements being of especial concern. Designed for students interested in marine biology of oceanography. Prerequisites: Biological Sciences 169A and 176 or consent of instructor.

180A-B Invertebrate Zoology (1-1) W, S of even years
Lecture, laboratory, field. Survey of the major invertebrate phyla. Emphasis in lecture will be placed on comparative morphology, evolution, adaptive physiology, and taxonomy of local marine invertebrates. Prerequisite: Biological Sciences 101B or consent of instructors; 180A is prerequisite for 180B.

183 Teratology (1) W of even years
Abnormal development of animals. The influence of changes in environmental, genetic, and biochemical factors which induce teratogenesis. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

185 Field Ornithology (1) S
Lecture. Field studies and readings from the periodical literature in ornithology. Emphasis will be on behavior and ecology, although aspects of physiology and taxonomy will be covered. Prerequisite: Consent of instructor. Nonmajors welcome.

186 Human Genetics (1) F of even years
Hereditary traits in man and human populations. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

Honors and Special Courses

2 Freshman Seminar (¼) F, W, S
Highly recommended for all freshmen. Once a week seminar of a small number of students and a faculty member to discuss a wide variety of relevant biological topics. Prerequisite: Freshman biological sciences majors.

55 Sophomore Seminars (½) F, W, S
Intensive study of selected topics in experimental biology. Prerequisite: Sophomore biological sciences majors.

190 Junior Seminars (½) F, W, S
Intensive study of selected topics in experimental biology. Once a week seminar of a small group of students with a faculty member. Prerequisite: Junior biological sciences majors.

191A-B-C Special Study in Biological Sciences Projects (1-1-1) F, W, S
Involves library research, motivation programs, and other independent projects under individual professor. Prerequisite: Consent of instructor.

198A-B-C Special Group Activities in Research (1) F, W, S
Involves group activities in research in selected areas of experimental biology. Possibility of graduation with honors. Prerequisite: Consent of instructor.

199A-B-C Special Study in Biological Sciences Research (1-1-1) F, W, S
Involves laboratory research under an individual professor, and possibility of graduation with honors. A written research paper and oral presentation will be required. Prerequisite: Consent of instructor.

GRADUATE STUDY IN THE SCHOOL OF BIOLOGICAL SCIENCES

DEPARTMENT OF MOLECULAR BIOLOGY AND BIOCHEMISTRY

Research in the Department is broadly representative of modern molecular biology and focuses on biological problems that can be approached at the molecular level. It includes emphasis on biochemistry, molecular genetics, enzymology, microbiology, immunology, and virology. Subjects in which there is more specific concentration are indicated by the research areas listed below for the faculty members. The Department is well equipped for work that requires preparative and analytical ultracentrifugation, culture of microorganisms and animal cells, radioactivity determination, and other specialized techniques.

Graduate students are required to take Molecular Biology and Biochemistry 204, 205, 206, and 207 during their first year. Additional course work will reflect their interests within the general field. All students must engage in regular teaching of undergraduates as part of their training.

Molecular Biology and Biochemistry Faculty

Robert C. Warner, *Chairman of the Department:* Molecular biology of nucleic acids; physical chemistry of macromolecules
Edward R. Arquilla: Structure-function characteristics and immunology of protein hormones
Dennis D. Cunningham: Biochemistry of mammalian cell division
Charles N. Gordon: Electron microscopy of biological macromolecules
Gale A. Granger: Immunology, medical microbiology; cell biology

Wesley Hatfield: Molecular mechanisms of biological control systems
Kenneth H. Ibsen: Regulation of energy metabolism; properties of regulatory enzymes
Calvin S. McLaughlin: Biochemical genetics of RNA and protein synthesis
Kivie Moldave: Protein biosynthesis in mammalian tissues
Harris S. Moyed: Regulation of enzyme action and synthesis; mode of action of plant auxins
Donald J. Raidt: Control of proliferation and differentiation in the immune response
Wendell M. Stanley, Jr.: Structure and function of macromolecules, biosynthesis of macromolecules in mammalian cells
Paul S. Sypherd: Genetic control of ribosomal RNA and protein
Ethel Tessman: Molecular biology; genetics; virology
Irwin Tessman: Viral genetics; mode of action of mutagens
Krishna K. Tewari: Nucleic acids of chloroplasts and other organelles
Edward K. Wagner: Animal virology; RNA synthesis
Clifford A. Woolfolk: General microbiology; enzymology
Daniel L. Wulff: Biochemical genetics

Courses in Molecular Biology and Biochemistry

200A-B-C Research in Molecular Biology and Biochemistry (½-3 per quarter) F, W, S
Individual research under a particular professor. See areas of interest under Molecular Biology and Biochemistry Faculty. Prerequisites: graduate registration and consent of instructor.

201A-B-C Seminar in Molecular Biology and Biochemistry (1-1-1) F, W, S
Content varies. Presentation of research from the departmental laboratories and associated topics that need fuller discussion; special recent developments when pertinent. Attendance is required of all graduate students in Molecular Biology and Biochemistry. Prerequisite: graduate registration.

203A-B-C Tutorial in Molecular Biology and Biochemistry (1-1-1) F, W, S
Tutorials will be in the area of the research interest of a particular professor who will relate current research in his laboratory to the literature in the field. Primarily intended for the graduate students doing or preparing to do research in his laboratory. Other graduate students will be admitted with the consent of the professor. Tutorials that will be conducted as journal clubs and open to all interested graduate students will be announced in advance. Prerequisites: Graduate registration and consent of the instructor.

204 Biochemical Methodology (1¼) F
Lectures and demonstrations on the principles, use, theory, and limitations of certain methods employed in molecular biology. Emphasis will be placed on centrifugation, radioactivity measurement and methodology, and fractionation methods, particularly column chromatography. Other topics may include pH measurement and buffer theory, UV and visible spectral measurements, CD and ORD, microbiological and phage methodology. Prerequisites: General biochemistry equivalent to Biological Sciences 101F and 101G; completion of or concurrent enrollment in physical chemistry is highly desirable.

This course will be part of our new graduate core curriculum and will be required of all first-year graduate students in Molecular Biology and Biochemistry. It is intended that this course be followed for Molecular Biology and Biochemistry graduate students in the next quarter by actual use of this methodology in the laboratory of the provisional sponsor. The course will be open to qualified undergraduates and graduate students from other departments for whom such additional laboratory experience cannot be offered.

205A-B Biochemistry (1) F, W
Structure and function of proteins. Basic aspects of enzymes as proteins including kinetics, allosteric mechanisms, relation of primary and subunit structure to catalytic properties. Metabolic mechanisms in cells with special attention to control mechanisms and application of organic reaction mechanism theory. Structure and function of nucleic acids. Biosynthesis of macromolecules. Prerequisites: Biological Sciences 101F and 101G; *organic chemistry; physical chemistry is desirable.*

207 Molecular Genetics (1) S
Molecular genetics; coding, control mechanisms in replication, transcription, and translation. Prerequisite: Biochemistry 205B.

208 Biophysical Chemistry (1) S
Lecture. Physical chemistry of macromolecules. Theory and application of techniques for investigating the size, conformation, structure, and solution properties of proteins and nucleic acids. Other biological problems will be examined from the physical chemical approach. Prerequisites: Chemistry 131A and B or their equivalent. This course is planned as a continuation of Chemistry 131A-B to form a one-year physical chemistry course for biology majors.

210 Biogenesis of Cell Organelles (1) S
Lecture. Intensive study of various cell structures such as nuclei, chloroplasts, mitochondria, ribosomes, and membranes in an attempt to correlate structure and function at the various levels of cellular organization. Differentiation, development, and replication of cell particles. Prerequisite: Biochemistry equivalent to Biological Sciences 101F and 101G

212 Virology (1) F
Lecture. Infective cycle, growth, reproduction, and host interrelationships of animal viruses. The ways in which animal viruses can be used to study basic problems in molecular biology will be emphasized. Prerequisites: Completion of Biological Sciences Core; genetics is recommended.

212L Virology Laboratory (¼) F
Laboratory work is available for a limited number of students. Prerequisites: Concurrent enrollment in 212 and consent of instructor.

280A-B-C Advanced Topics in Biochemistry and Molecular Biology (1-1-1) F, W, S
Selected topics in advanced biochemistry and molecular biology. Lectures and discussions with emphasis on recent literature. Specific topics and the instructor will be announced in advance. Prerequisite: consent of instructor; open to graduate students or advanced undergraduates.

290A-B-C Colloquium in Molecular Biology and Biochemistry (½-½-½) F, W, S
Presentation of contemporary research problems in molecular biology and biochemistry and related areas. Lecturers or invited speakers will introduce research and review topics. Prerequisite: graduate registration.

DEPARTMENT OF DEVELOPMENTAL AND CELL BIOLOGY

Developmental and cell biology is concerned with the development, physiology, structure, and function of organisms and their component cells. The Department maintains facilities for research involving biochemistry, genetics, electron microscopy, cell, tissue, and organism culture, microsurgery, and neurophysicology.

Students in the Department of Developmental and Cell Biology are offered a one-year graduate Core program which will consist of a three-quarter sequence

in developmental biology, genetics, and cell biology and/or a three-quarter sequence of organismic physiology. One or both Core sequences may be taken simultaneously with the graduate Cores in the Department of Molecular Biology and Biochemistry. Students are able to diverge from this basic Core into their areas of special interest by means of graduate seminar courses.

The main emphasis of the Developmental and Cell Biology graduate training program is research training in: (1) developmental and cell biology and (2) comparative physiology of animals and plants. However, since many doctoral students in the department undertake academic careers, the Department expects each graduate student to participate in a directed teaching experience during his graduate program.

Developmental and Cell Biology Faculty

Howard A. Schneiderman, *Chairman of the Department:* Developmental biology (insect development and physiology)
Stuart M. Krassner, *Vice Chairman of the Department:* Physiology, cell biology (parasitology and invertebrate biology)
Joseph Arditti: Physiology (orchid biology)
Ernest A. Ball: Developmental biology (development of higher plants)
Hans R. Bode: Developmental biology of coelenterates
Peter J. Bryant: Diploid genetics
Susan V. Bryant: Regeneration
Richard D. Campbell: Developmental biology (invertebrate development)
Donald E. Fosket: Plant physiology and development
Ralph W. Gerard: Physiology (general and neurophysiology)
Patrick L. Healey: Cell biology, developmental biology (developmental cytology and ultrastructure)
E. Marshall Johnson: Experimental teratology
Robert K. Josephson: Comparative neurophysiology
Harold Koopowitz: Physiology (sensory and invertebrate physiology)
Howard M. Lenhoff: Physiology, developmental biology (marine invertebrate biology and comparative biochemistry)
Gerold A. Schubiger: Insect development
Grover C. Stephens: Physiology (comparative animal physiology)

Courses in Developmental and Cell Biology

200A-B-C Research in Developmental and Cell Biology (½ to 3 per quarter) F, W, S
Individual research under a particular professor. Prerequisites: graduate registration and consent of instructor.

201A-B-C Seminar in Developmental and Cell Biology (1-1-1) F, W, S
Advanced study in various fields of organismic biology. Prerequisite: graduate registration.

202A-B-C Techniques in Developmental and Cell Biology (1-1-1) F, W, S
A year laboratory course covering techniques in electronmicroscopy, histology, autoradiography, microsurgery, tissue culture, and biochemistry. Biochemistry portion is the same as Molecular Biology 204. Prerequisite: Consent of instructor.

203A-B-C Graduate Tutorial in Developmental and Cell Biology (1-1-1) F, W, S
Intended for advanced study in areas not represented by formal courses. Tutorial may involve individual or small group study through discussion, reading, and composition. Time and subject matter to be arranged individually. Prerequisite: graduate registration.

230A-B-C Developmental and Cell Biology Graduate Core

230A Developmental Biology (1) F
Consideration of some major problems in developmental biology, such as determination, differentiation, pattern formation, and morphogenesis in plants and animals. Prerequisites: Biological Sciences 101A-B-C.

230B Genetics (1) W
Covers basic diploid genetics, cytogenetics, and the control of genic activity in multicellular organisms. Prerequisites: Biological Sciences 101A-B-C.

230C Cell Biology (1) S
Involves a study of the structure and function of the cell and its organelles, the relationships between cells, and the relationships between nucleus and cytoplasm in animals and plants. Prerequisites: Biological Sciences 101A-B-C.

231A-B-C Physiology Graduate Core (1-1-1) F, W, S
Three lectures a week. Laboratory with permission of instructor. Prerequisites: Chemistry 51C, Biological Sciences 101C.

231A (1) F
Covers maintenance aspects of physiology: water balance, feeding and digestion, metabolism, respiration and circulation.

231B (1) W
Focuses on operational aspects of physiology, electrogenesis, nerve and muscle physiology, ciliary and ameboid movement, turgor movements and sensory physiology.

231C (1) S
Concerned with aspects of autotrophic physiology: photosynthesis; translocation, environmental stimuli, and hormones.

235 Advanced Topics in Comparative Physiology (1) F of even years
Lecture, laboratory, demonstration, discussion. Topics will change from year to year. Subjects will be primarily in the areas of osmoregulation, water balance, nutrition, and metabolism. Prerequisite: Biol. Sci. 131 or equivalent or consent of instructor.

239 Cell Development (1) F
Lecture and demonstrations. Intensive analysis of subcellular events which control cellular differentiation and organism development. Prerequisites: Biological Sciences 136 and 144.

240 Comparative Plant Morphology (1) W
Lecture and laboratory. Forms, structures, and functions of vegetative and reproductive aspects of algae, fungi, bryophytes, and vascular plants, with interpretations from the modern literature emphasizing morphogenetical and ultrastructural discoveries, utilizing a background of phylogeny. Prerequisites: Biological Sciences 101B-C-D or consent of instructor.

241 Recent Advances in Plant Physiology (1) F, W, S
Discussion. Directed reading and discussion of recently published papers in plant physiology; plant biochemistry and phytochemistry. Prerequisites: Biol. Sci. 135A-B, 138A-B-C, equivalent, or consent of instructor.

242 Regulatory Mechanisms in Development (1) W
Lectures and discussion of molecular mechanisms in the control of development. Emphasis will be placed on cell differentiation. Prerequisite: Biological Sciences 136 or consent of instructor.

245 Principles of Regeneration (1) S of odd years
Problems concerning the developmental restoration of body parts in invertebrate and vertebrate animals. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

246 Problems in Plant Development (1) W
Basic problems in the molecular, genetic, and morphogenetic control of plant development. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

249 Insect Development (1) S
Lecture. Insects dicussed as providing ideal experimental situations in which to analyze major problems of developmental biology, including genetic control of mechanisms, the control of determination and differentiation, pattern formation, hormone action, etc. By focusing on a single group of organisms, the interrelationships between these problems can be explored in depth. Prerequisite: Consent of instructor.

250 Principles of Growth (1) F of even years
Growth and morphogenesis in plants and animals. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

251 Developmental Genetics (1) F of odd years
Genetic aspects of developmental processes. Prerequisite: Biological Sciences 136, 137, 144, or consent of instructor.

261 Advanced Topics in Plant Physiology (1) F, W, S
Topics will change from year to year. Subjects will be on major problems in plant physiology. Prerequisite: Developmental and Cell Biology 231C or consent of instructor.

262 Advanced Topics in Sensory Physiology (1) F, W, S
Topics will change from year to year. Subjects will be on major problems in sensory physiology. Prerequisite: Developmental and Cell Biology 231B or consent of instructor.

263 Insect Physiology (1) F, W, S
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.

264 Coelenterate Biology (1) F, W, S
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.

265 Parasitology (1) F, W, S
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.

266 Comparative Physiology (1) F, W, S
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.

267 Morphogenesis of Vascular Plants (1) F
Utilization of current literature, with demonstrations of the origins, micro and ultrastructure, development of the cell, cell wall, parenchyma, collenchyma, meristems, epidermis, sclerenchyma, xylem, phloem, stem, leaf, root, periderm, abscission, flower, fruit, seed, laticifers. Theoretical considerations of effects of genic and environmental factors in development will be stressed. Prerequisites: Biological Sciences 140 or equivalent courses in elementary morphology or anatomy of vascular plants, or consent of instructor.

283 Teratology (1) W of even years
Abnormal development of animals. The influence of changes in environmental, genetic, and biochemical factors which induce teratogenesis. Prerequisites: Biological Sciences 136, 137, 144, or consent of instructor.

286 Human Genetics (1) F of even years
Hereditary traits in man and human populations. Prerequisites: Biological Sciences 136, 137, 144, or consent of instructor.

290A-B-C Colloquium in Developmental and Cell Biology (½-½-½) F, W, S
Presentation of contemporary research problems in organismic biology and related areas. Research students, faculty, and other invited speakers will introduce research and review topics. Prerequisite: graduate registration or enrollment in Biological Sciences 199.

DEPARTMENT OF PSYCHOBIOLOGY

Psychobiology is concerned with the biological bases of behavior. The focus of study in psychobiology is upon the role of behavior in adaptation and the mechanisms by which this is accomplished. Emphasis is given to problems of the neural, endocrine, biochemical, genetic, and experimental determinants of arousal and attention, sensation and perception, learning, memory, motivation, emotion, and instinctive behavior. A broad comparative approach is taken to these problems.

The primary emphasis of the graduate training program in Psychobiology is on research training. Nonetheless, since most psychobiology doctoral students continue their careers in academic settings, the Department requires each graduate student to participate in a directed teaching experience during each year of his graduate program. This training insures that graduates are experienced and capable teachers as well as scientists.

Psychobiology Faculty

James L. McGaugh, *Chairman of the Department:* Learning and memory
Carl Cotman: Neurochemistry, molecular psychology
Roland Giolli: Experimental neuroanatomy
Albert Globus: Experimental neuroanatomy and neurophysiology
Robert K. Josephson: Invertebrate neurophysiology
Gary S. Lynch: Neural bases of activation and arousal
Ernest P. Noble: Human Behavior
Roger W. Russell: Biological bases of behavior, psychopharmacology
Timothy J. Teyler: Sensory processes, learning
Richard F. Thompson: Neurophysiological bases of behavior
Marcel Verzeano: Neurophysiology
Norman M. Weinberger: Neural bases of arousal and attention
Richard E. Whalen: Neural and endocrine basis of behavior

Courses in Psychobiology

200A-B-C Research in Psychobiology (½ to 3 per quarter) F, W, S
Individual research under specific professor. Prerequisites: Graduate registration and consent of instructor.

201A-B-C Seminar in Psychobiology (1-1-1) F, W, S
Advanced study of current topics in various areas of psychobiology. Topics will vary from quarter to quarter and from year to year. Prerequisites: Graduate registration and consent of instructor.

202A-B-C Methods in Psychobiology (1-1-1) F, W, S
Lecture, discussion, and laboratory demonstration and participation course emphasizing classical as well as recent developments in psychobiological research methods and techniques. *Prerequisite: Consent of instructor.*

Psychobiology Graduate Core 206A-B-C, 207A-B-C, 208A-B-C.
An integrated sequence in neurobiology (206A-B, 207A, 208A-B) and behavioral biology (206C, 207B-C, 208C). Required of all first-year graduate students. Admission for other students to 206 and 207 by consent of instructor.

206A-B-C Psychobiology Graduate Core: Lecture

206A Neuroanatomy (1) F
A comprehensive consideration of the organization of the vertebrate nervous system at both the gross and microscopic levels.

206B Neurophysiology (1) W
An examination of basic neurophysiology including function at the level of single neurons, sensory and motor systems, reticular and other nonspecific systems. Includes a behavioral and neural examination of sleep, wakefulness, and dreaming.

206C Comparative Behavior (1) S
An analysis of the nature and bases of complex animal behavior with particular emphasis on the problem of "instinctive behavior."

207A-B-C Psychobiology Graduate Core: Lecture

207A Neurochemistry (1) F
Biochemical aspects of neuron function, including synapse chemistry, RNA and protein metabolism, and the relationships of metabolism to nerve activity.

207B Attentive and Motivational Processes (1) W
An analysis of the structure and function of peripheral and central nervous system processes underlying behavioral attention and motivation. Particular emphasis is given to a critical evaluation of the relationships between brain processes and behavioral stimulus selection, behavioral excitability, feeding, drinking, and agonistic behavior.

207C Learning and Memory (1) S
A consideration of the problems of learning and memory in animals in terms of current research and theory. The problem of the nature of mechanisms involved in memory storage is emphasized.

208A-B-C Psychobiology Graduate Core: Research Methodology and Techniques
An integrated three-quarter sequence.

208A Neuroanatomy and Neurochemistry (1) F
Gross and microscopic techniques for analyzing nervous systems, including neurohistology with normal and experimental material. Biochemical techniques for the analysis of brain tissue, including separation and identification of cellular constituents.

208B Neurophysiology (1) W
Electrophysiological techniques for analyzing the central nervous system. Instruction in the use of single unit, multiple unit, gross evoked potential, and electroencephalographic recordings in classical preparations and chronically prepared animals.

208C Behavioral Biology (1) S
Methods for describing and analyzing the behavior of organisms, including species-specific behaviors. Assessment of learning and memory in animals, including the use of pharmacological agents.

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240 Advanced Analysis of Learning and Memory (1) F of even years
Advanced analysis of contemporary research concerning the nature and neurobiological bases of learning and memory. Special emphasis is given to time-dependent processes involved in memory storage.

241 Advanced Analysis of Hormones and Behavior (1) S of even years
Relationships which exist between endocrine secretions, the brain and behavior. The biology of reproduction will be covered in detail as will the role of hormones in development stress and social behavior.

242 Advanced Neurophysiology (1) W of even years
The study of the electrical activity of neuronal networks of cortical and subcortical structures as they relate to complex functioning of the brain.

243 Advanced Analysis of Brain and Behavior (1) F of odd years
Analysis of basic mechanisms underlying behavioral modification and plasticity. Emphasis is given to processes involved in habituation, sensitization, and classical and instrumental conditioning.

244 Advanced Neurochemistry (1) W of odd years
An integrated survey of the chemical and physiological mechanisms of synaptic transmission. Selected topics include the growth and modification of synaptic connections from a chemical viewpoint.

245 Advanced Psychopharmacology (1) S of even years
Psychopharmacology is defined in terms of interactions among three classes of variables: drugs, biochemical events, and behavior. Chemical agents introduced by various routes into the body produce changes in biochemical events, which, in turn, may be reflected in changes of behavior. The course is concerned with the natures of such interactions and with investigation of them by experimental and clinical methods. Emphasis is placed first on matters of research design, techniques, and data analysis and is followed by examination of the present state of knowledge about how changes in selected biochemical systems (particularly neurohumoral transmitter systems) affect various forms of behavior.

246 Advanced Analysis of Attentive Processes (1) S of odd years
A consideration of behavioral and neural aspects of attention. This course critically examines the concept of "attention" from a behavioral point of view and examines classical and current approaches to the brain mechanisms which form the substrates of behavioral attention.

247 Advanced Analysis of Behavioral Arousal (1) W
Investigation of the neuroanatomical and neurochemical systems which produce and regulate behavioral excitability. Emphasis will be placed on design and analysis of neural models which incorporate established neurological and behavioral findings.

248 Advanced Analysis in Neuroanatomy (1) W of odd years
A consideration of the anatomical-histological organization of the somatosensory, auditory, and visual systems of vertebrates.

249 Advanced Fine Neuroanatomy (1) S of odd years
A critical review of neuroanatomical methods used to elucidate the morphological dependence of neurons. The validity of experimental data pertinent to our understanding of the synaptic site, function, and surrounding structures will be evaluated by means of a review of classical and recent articles in the electronmicroscopal and histological literature.

250 Advanced Neuroendocrinology (1) W of even years
Basic mechanisms of neuroendocrine functions and their relationships to human and animal behavior.

260 Seminar in Learning and Memory (1/3-1/3-1/3) F, W, S

261 Seminar in Hormones and Behavior (1/3-1/3-1/3) F, W, S

262 Seminar in Neural Networks (1/3-1/3-1/3) F, W, S

263 Seminar in Neural Plasticity (1/3-1/3-1/3) F, W, S

264 Seminar in Neurochemistry (1/3-1/3-1/3) F, W, S

265 Seminar in Psychopharmacology (1/3-1/3-1/3) F, W, S

266 Seminar in Arousal and Attention (1/3-1/3-1/3) F, W, S

267 Seminar in Behavioral Excitability (1/3-1/3-1/3) F, W, S

268 Seminar in Neuroanatomy (1/3-1/3-1/3) F, W, S

269 Seminar in Fine Neuroanatomy (1/3-1/3-1/3) F, W, S

270 Seminar in Neuroendocrinology (1/3-1/3-1/3) F, W, S

290A-B-C Colloquium in Psychobiology (½-½-½) F, W, S
Presentation of contemporary research problems in psychobiology and related areas by invited speakers. Prerequisite: Graduate enrollment in the Department of Psychobiology.

DEPARTMENT OF POPULATION AND ENVIRONMENTAL BIOLOGY

The areas of interest in the Department of Population and Environmental Biology range from the environmental and genetical relations of populations to the structure and functions of ecosystems. Directions of specialization within this area include population dynamics and population genetics, evolution and adaptation, plant and animal physiology, biogeography and paleoecology, taxonomy and systematics, analysis of plant and animal communities, human ecology, and marine ecology. These diverse specializations share a common concern with phenomena at levels of organization above that of the individual organism—the population, community, and ecosystem.

The new ecology requires good preparation in mathematics, statistical methods, computer techniques, and foreign language.

Population and Environmental Biology Faculty

Peter S. Dixon, *Chairman of the Department:* Phycology
Peter R. Atsatt: Plant ecology and evolution
Arthur S. Boughey: Human ecology
George L. Hunt: Population ecology
Keith E. Justice: Computer simulated models, genetics, and ecology of animal populations
Mark M. Littler: Marine productivity and phytoplankton ecology
Richard E. MacMillen: Physiological animal ecology
Gordon S. Marsh: General entomology
Philip W. Rundel: Physiological plant ecology
Roger R. Seapy: Marine invertebrate ecology

Courses in Population and Environmental Biology

200A-B-C Research in Population and Environmental Biology
(½ to 3 per quarter) F, W, S
Individual research under a particular professor. Prerequisites: graduate registration and consent of instructor.

201 Seminar in Population and Environmental Biology (½) F
Introduction to areas of faculty research in population and environmental biology. Required of all entering graduate students.

203A-B-C Graduate Tutorial in Population and Environmental Biology
(½ to 3 per quarter) F, W, S
Advanced study in areas not represented by formal courses. Tutorials may involve individual or small group study through reading, discussion, and composition. Prerequisites: graduate registration and consent of instructor.

210 Tropical Biology: An Ecological Approach (3) W, Summer
This course deals with biological concepts that can be treated effectively only by intensive field study and integrates botanical and zoological aspects of tropical environments in Costa Rica, Central America. Preference is given to students in the early stages of their graduate work. Prerequisites: graduate standing with a minimum of

four graduate courses in biology, including at least one each in botany, zoology, and general ecology. Admission dependent upon acceptance by the Organization for Tropical Studies (O.T.S.) program.

211 Tropical Population Biology (3) Summer
Advanced field problems at the various O.T.S. centers in Costa Rica. Prerequisites: registration for graduate work in the School of Biological Sciences, previous experience in tropical biology, and acceptance by the O.T.S. program.

212 Tropical Marine Biology (3) Summer
The dynamics of tropical shallow-water communities through ecological-evolutionary studies. Emphasis will be placed on marine communities unique to the tropics and subtropics and on experimental methods. Prerequisites: graduate standing with previous graduate or undergraduate work in marine invertebrates and marine ecology; a working knowledge of statistics is recommended. Requires acceptance by the O.T.S. program.

220 Seminar in Evolution (½ to 1) F, W, S

221 Seminar in Human Ecology (½ to 1) F, W, S

222 Seminar in Phycology (½ to 1) F, W, S

223 Seminar in Population Biology (½ to 1) F, W, S

224 Seminar in Vertebrate Biology (½ to 1) F, W, S

225 Seminar in Plant Ecology (½ to 1) F, W, S

226 Seminar in Marine Ecology (½ to 1) F, W, S

227 Seminar in Population/Community Ecology (½ to 1) F, W, S

228 Seminar in Phytoplankton Biology (½ to 1) F, W, S

264 Topics in Population/Community Ecology (1) W of odd years
Examination of the foundations and historical development of ideas in population ecology. Modern concepts will be evaluated through student participation in seminars and extensive use of the periodical literature. Prerequisites: Graduate registration and advanced undergraduates with consent of instructor.

265 Pleistocene Environments (1) W
Review of the environmental factors contemporaneous with hominid evolution during late Tertiary and Pleistocene times. Surveys of geological, climatological, and biotic features of these environments. Prerequisite: graduate registration.

267 Field Botany (1) S
Lecture, laboratory, field. A survey of selected plant families, illustrating the role of floral biology and agencies of pollination in angiosperm evolution. Each student will choose and complete a short research problem, normally one that is complementary to the topics given in lecture. Prerequisite: graduate registration.

269A Marine Ecology (1) F
Lecture. Fundamental concepts of marine ecology. Physical and chemical factors, current systems and water masses, trophic ecology, distributions of organisms, survey of pelagic and benthic communities. Prerequisites: graduate registration and Biological Sciences 101E.

269B Field Marine Ecology (1) W of odd years
Field and laboratory. A survey of benthic and pelagic communities, emphasizing quantitative field and lab techniques. The biotic structure of, adaptations to, and species interactions within these communities will be studied. Each student will devise, conduct, and report on a brief research problem. Prerequisites: graduate registration, Biological Sciences 180A-B, and Biological Sciences 269A.

270 Evolutionary Processes (1) W
Lecture. An examination of the causes and effects of genetic variation in populations of both haploid and diploid organisms. Mechanisms that control rates of genetic change are emphasized. Topics include recombination, extrachromosomal inheritance, chromosomal reorganization, breeding systems, polyploidy, developmental

canalization, racial variation, speciation, hybridization, mimicry, and co-evolution. Prerequisites: graduate registration and Biological Sciences 101E.

271 Vegetation and Ecosystem Dynamics (1) F
Lecture, field. An introduction to major vegetation types of the world and the dynamics of the ecosystems of which they are a part. Particular emphasis will be placed on community ecosystem dynamics including aspects of mineral cycling, water relations, climatology, and biological interactions. The role of these factors within dominant ecosystems of the world today will be analyzed. Major emphasis will be given to plant communities. Students will be expected to participate in two weekend field trips. A research paper is required. Prerequisites: graduate registration and consent of instructor.

272 Physiological Plant Ecology (1) W
Lecture, laboratory, field. An examination of the functional response of individual plants and plant communities to their environment. Major emphasis will be given to photosynthetic response and plant water relations. Other topics for consideration will include photoperiodism, vernalization, dormancy, heat exchange by leaves, carbohydrate cycles, germination, and allelopathic interactions. A research paper is required. Prerequisites: graduate registration and previous courses in ecology and plant physiology.

273 Physiological Animal Ecology (1)
Lecture, laboratory, field. An examination of the functional means by which vertebrates cope with their environments. Particular emphasis will be placed on the roles of osmoregulation, thermoregulation, and energy metabolism in the lives of semidesert and desert-dwelling tetrapods. Prerequisites: graduate registration and consent of instructor.

274 Behavioral Ecology (1) F
Lecture and seminar. Consideration of animal behavior as an evolutionary solution to problems encountered during an animal's life cycle. Includes a broad comparative approach to communication, habitat selection, and food finding. Prerequisite: Consent of instructor.

275 Phycology (1) W
Lecture and laboratory. A survey of the structure, reproduction, and life histories of the algae, both freshwater and marine. Introduction to techniques involved in the culture and cytological investigation of algal material. Prerequisite: Biological Sciences 101E or consent of instructor.

280A-B Invertebrate Zoology (1-1) W, S of even years
Lecture, laboratory, field. Survey of the major invertebrate phyla. Emphasis in lecture will be placed on comparative morphology, evolution, adaptive physiology, and taxonomy of local marine invertebrates. Prerequisite: graduate registration.

290A-B-C Colloquium in Population and Environmental Biology (1/3-1/3-1/3) F,W,S
Invited speakers will introduce research and review topics within the area of population and environmental biology. Prerequisite: graduate registration.

School of Fine Arts

Clayton Garrison
Dean

The primary activity of the School of Fine Arts is creating and performing works of art in an atmosphere in which the creative process is central. We are committed to the creative act: to making and performing. A program based on such a commitment requires a faculty experienced in the creative process. The faculty in the School of Fine Arts is comprised primarily of permanent artists-in-residence. Studio courses in all areas are taught by eminent professionals who have earned their living professionally and who continue to maintain professional assignments and commitments.

In addition to the permanent artist-in-resident faculty, visiting artists have and will always comprise about one-third of the staff, providing a constant inflow of ideas and personalities counteracting the sometimes fixed influence of a permanent faculty. The association of many visiting artists exposes the student to a diversity of images and ideas, and encourages him to apply himself to a creative situation rather than to apply pedagogical techniques or a rigid intellectual pattern. A variety of artists challenges the student's sensibilities and encourages him to think and to create freshly and freely.

This ideology focused on the creative process, the professional and scholar-performer faculty, and the individual's commitment and courage provides, we feel, an ideal condition for the serious student in the arts who wants to be painting, sculpturing, dancing, acting, singing, directing, choreographing, writing, or playing an instrument six to ten hours a day during the most sensitive and formative years of his life. Our central concern is the development of a creative talent in an atmosphere saturated with creativity.

Curricula in all areas of the fine arts include a comprehensive study of literature, history, theory, and criticism—resources that are not only substantive materials in themselves, but essential research sources for the creative art. The intellectual activity of the theoretical, literary, and historical courses complements the practical work in the studio workshops and performances.

Departmental majors are offered in Art, Dance, Drama, and Music. Departmental requirements include (1) extensive studio and workshop experiences, (2) essential theoretical and historical backgrounds, and (3) exercises in criticism. The requirements for all majors in the fine arts are designed to provide opportunities for the student-artist to work creatively at his medium for at least four hours a day from the freshman year through graduation. Introductory courses in film writing and film making are also available in the Drama Department.

In addition to producing student concerts, musicals, and dramatic performances, the School of Fine Arts in collaboration with UCI's Committee for Arts

and Lectures presents a varied offering of cultural events each year, including distinguished lecturers, world-renowned concert artists, outstanding dance and drama groups, jazz and folk performers, a film series, and a gallery program.

The School of Fine Arts is organized as a School with areas of instruction and production, not with formal departments. The faculty generally meets as a whole one or two times a year. The faculty in each of the major areas of instruction (art, dance, drama, music) nominates five students to the Dean's Student Advisory Council. The Dean selects two undergraduates and one graduate student from each area. These twelve students comprise the Dean's Student Advisory Council for a term of one year. The Council meets about six times a year. This council reviews matters concerning appointments and promotions, curriculum, appropriations, policy on graduate admissions, productions and concerts, and community relations. There is no difference between undergraduate and graduate participation. The students act as an ad hoc review committee on all permanent appointments and on all recommendations for merit increases and promotions. Students in the School of Fine Arts are involved at a less formal level as participants, organizers, and coordinators throughout the year in the various productional units, including the University Chorus, University Orchestra, University Theatre, Student Exhibitions, Graduate Art Gallery, Dance Concerts, Friday One O'Clock Concerts, Dance Workshop, Drama Workshop, Music Workshop, and Film Production.

Degrees Offered in the School

Art	B.A.
Dance	B.A.
Drama	B.A.
Music	B.A.
Fine Arts	M.F.A.

Students who have distinguished themselves academically and who have made substantial contributions in performances or exhibitions will be considered for honors at graduation. In keeping with the Academic Senate Resolution, no more than 12% of the graduating seniors may receive honors.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None (see under departments).

Graduate Program

The School of Fine Arts offers programs leading to the degree of Master of Fine Arts with programs in Art, Dance, Drama, and Music. The primary activity of the School of Fine Arts is performance— the creative act. Research activities

are concerned with illuminating performance and inspiring the studio experience. The intellectual activity of theoretical, literary, and historical courses complements the practical work in studio workshops and performance. The aim of the program is, thus, to produce literate artists who are responsive to intellectual stimuli, who are capable of integrating knowledge into creative acts, and who are disciplined to the point of freedom. It is the strong belief of the School that intellectual integrity and professional excellence cannot exist without each other.

Admission to the Program

Graduate Division Requirements

See page 65 for general requirements.

Although the campus deadline for applications to be filed for the fall quarter is July 1, the quota of graduate students admitted to the School of Fine Arts is usually filled by March 1. Students are, therefore, advised to make application and to arrange for submission of portfolios, auditions, compositions, and interviews by February 1. Students are not admitted to the program during the winter or spring quarters. Students applying for scholarships and fellowships should do so through the Graduate Division not later than February 1 for the following year. The School of Fine Arts has a modest number of Teaching Assistantships available in all areas. Students interested in such awards should apply directly to the School which will review all applicants and inform the successful candidates by May 1 for the following academic year.

Advancement to Candidacy

Application for advancement to candidacy for the degree must be made through the Dean of the Graduate Division. Application must be made with the recommendation of the department concerned and should take place no later than the beginning of the quarter in which the student expects to complete the requirements for the degree. Admission to candidacy is not automatic; it requires a formal application distinct from registration.

Departmental Admission and Degree Requirements

Upon admission to the program the student will be assigned an advisor in his specific area. He should discuss with this advisor the scope of his undergraduate preparation to determine any areas which may need strengthening if the student is to derive full benefit from graduate study. The advisor should also be consulted by the student upon the best temporal arrangement of his program, and upon the nature of his qualifying and final projects.

Master of Fine Arts Program in Art

Degree Offered

M.F.A. in painting, sculpture, ceramics, graphic arts.

Admission

Applicants for admission to the degree program must:

(a) meet the general requirements for admission to graduate status.

(b) hold a B.A. or B.F.A. in Art.

Entrance Requirements

All candidates must submit a portfolio of their creative work.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions. No program is offered during the summer session.

(b) The student's progress and body of work will be reviewed by a faculty committee, normally after three quarters in residence. A satisfactory opinion by this committee will allow the student to progress to candidacy for the degree.

(c) Demonstration of degree calibre by a specific creative project. This project is to be supported by a written paper of about twenty pages. The project and paper are to be defended in a one-hour oral examination which may also test the candidate's general knowledge in the area in which his project falls.

Specific Degree Requirements

Completion with distinction of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate courses may count towards the degree. Electives may be taken in any discipline. The 72 units will normally be made up in the following manner:

First Year
3 seminars in problems of contemporary art
3 courses studio and/or graduate projects
3 electives

Second Year
3 seminars in problems of contemporary art
3 courses studio and/or graduate projects
1 course thesis preparation
2 electives

Master of Fine Arts Program in Dance

Degree Offered

M.F.A. in choreography and in the teaching of dance.

Admission

Applicants for admission to the degree program must:

(a) meet the general requirements for admission to graduate status.

(b) hold a B.A. or B.F.A. in Dance. Candidates must meet the minimum requirements for the B.A. degree from the Irvine campus of the University of California.

Entrance Requirements

All candidates must provide proof by personal audition, or submission of a film of their work, of their practical ability in their chosen area.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions. No program is offered during the summer session.

(b) Demonstration, normally after three quarters in residence, of satisfactory progress by the presentation of a choreographic project. Acceptable completion of this project will allow the student to progress to candidacy for the degree.

(c) Demonstration of degree calibre by a major production thesis: in choreography this would be the composition and production of a choreographic work; in teaching this would be a practical and comprehensive project concerned with the teaching of dance. Either the production thesis or the teaching project must be supported by a written paper of about twenty pages. The production or project and supporting paper are to be defended in a one-hour oral examination which may also test the candidate's general knowledge in his area.

OR

Preparation of a written thesis of about seventy-five pages in a chosen area of research. This thesis is to be defended in a one-hour oral examination which may also test the candidate's general knowledge in his area.

(d) Candidates presenting a written research thesis are required to demonstrate a reading knowledge of French. Subject to faculty approval this knowledge may be demonstrated by:

1. Educational Testing Service Foreign Language Test
2. An examination administered by the faculty
3. Satisfactory completion of a course at a specified level

Specific Degree Requirements

Completion with distinction of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate courses may count toward the degree. Electives may be taken in any discipline. The 72 units will normally be made up in the following manner:

Choreography
6 courses in graduate choreography
5 studio courses in ballet, freestyle, jazz
3 seminars in theory, history
4 electives (one elective may be used for preparation of final project)

Teaching
3 courses in the teaching of dance
3 courses in choreography
3 seminars in theory, history
5 studio courses in ballet, freestyle, jazz
1 course in teaching of notation
3 electives (one elective may be used for preparation of final project)

Master of Fine Arts Program in Drama

Degree Offered

M.F.A. in acting, directing, design.

Admission

Applicants for admission to the degree program must:

(a) meet the general requirements for admission to graduate status.

(b) hold a B.A. or B.F.A. in Drama.

Entrance Requirements

(a) All candidates must submit a portfolio of creative achievements in their area, i.e. costume, lighting, or stage design; or a dossier which includes biographical information, a complete resume of theatrical experience, reviews, and photographs where available.

(b) Actors will be required to present an audition scene.

(c) Directors will be asked to suggest a play about which they are prepared to talk in directorial terms to an auditioning committee.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions. No program is offered during the summer session.

(b) Demonstration, normally after three quarters in residence, of satisfactory progress by presentation of a creative project, the acceptable completion of which allows the student to progress to candidacy for the degree.

(c) Demonstration of degree calibre by a major production thesis, i.e. perform a major role, direct or design a major production. This thesis is to be supported by a written paper of about twenty pages or, if a director, a complete prompt book which includes a full analysis of the director's intentions. The production thesis and paper are to be defended in a one-hour oral examination which may also test the candidate's general knowledge in the area of his specialization.

(d) Dependent upon the nature of the candidate's area of specialization and thesis, he may be required to demonstrate a reading knowledge of one or two languages other than English. Subject to faculty approval, this knowledge may be demonstrated by:
1. Educational Testing Service Foreign Language Test
2. An examination administered by the faculty
3. Satisfactory completion of a course at a specified level

(e) Participation in productions at UCI throughout residence.

Specific Degree Requirements

Completion with distinction of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate

courses may count towards the degree. Electives may be taken in any discipline. The 72 units will normally be made up in the following manner:

Acting
6 courses of graduate acting
1 course in directing
3 seminars in dramatic literature
3 courses in advanced University Theatre
1 course graduate projects
1 course thesis preparation
3 electives

Directing
5 courses of graduate directing
1 course in acting
1 course advanced design
3 courses advanced University Theatre
3 seminars in dramatic literature
1 course graduate projects
1 course thesis preparation
3 electives

Design
6 courses of graduate design
1 course in directing
3 seminars in dramatic literature
3 courses advanced University Theatre
1 course graduate projects
1 course thesis preparation
3 electives

Master of Fine Arts Program in Music

Degree Offered

M.F.A. in composition, voice, choral conducting, or musicology.

Admission

Applicants for admission to the degree program must:

(a) meet the general requirements for admission to graduate status. The Graduate Record Examination is not required, although an applicant may submit the results of it if he so wishes.

(b) hold a B.A. or a B.M. in Music, or the equivalent.

Entrance Requirements

(a) The applicant must submit a composition or audition (or present a recorded demonstration of performance) if applying for the program in composition or in performance. The applicant must also submit an 8-10 page paper on a musical subject (analytical, theoretical, historical); this requirement may be fulfilled by the submission of an undergraduate term paper.

(b) The applicant's knowledge of basic musical tools: ear training, sight-singing, written and keyboard harmony, dictation, score reading, and minimal facility at the piano (including sight-reading) will be tested by an examination. The applicant must submit proof of at least two years college study of at least one of the following languages: French, German, Italian.

General Degree Requirements

(a) Residence: normally, two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions. No program is offered during the summer session.

(b) Comprehensive examination: normally undertaken after 3-4 quarters in residence. Passing these examinations allows the student to progress to candidacy for the M.F.A. A student failing these examinations may reschedule them once in the following quarter.

(c) Demonstration by a written examination (administered by the music faculty) of a reading knowledge of two languages other than English (French, Italian, German, Latin). Reading knowledge of one of these languages must be demonstrated by written examination before the candidate may schedule his comprehensive examination (see above, under b).

(d) Participation in performance at UCI throughout residence.

Specific Degree Requirements

(a) Completion with distinction of 72 quarter units of graduate level courses, or approved upper-division undergraduate courses. The latter, when taken by a graduate student at UCI and not exceeding twenty quarter units, may count towards the M.F.A. degree. Electives may be taken in any discipline.

The following programs are now offered:

Composition
2 courses in bibliography
2 seminars in history
2 courses in elementary composition
2 courses in intermediate composition
2 courses in advanced composition; see (b)1. below.
3 courses in graduate projects
5 electives

Voice or Choral Conducting
2 courses in bibliography
2 tutorials (1st year)
2 courses in diction and performance
2 seminars in vocal literature
1 tutorial (2nd year)
1 course in diction and preparation
1 two recitals; see (b)1. below.
3 courses in graduate projects
4 electives

Musicology
2 courses in bibliography
1 course in notation
5 seminars in history
2 courses in thesis preparation; see (b)1. below.
2 courses in directed reading
1 course in graduate projects
5 electives

(b) 1. Preparation of a project in composition or a performance, supported by a written essay of about twenty pages.
OR
2. Preparation of an essay (thesis) of about seventy-five pages in an area of musical research.

ART

The program in art provides basic studio experiences in the fundamental knowledge and techniques of drawing, painting, sculpture, design, ceramics, and graphic arts, and a comprehensive study of the history and criticism of art. The curriculum constantly relates studio practice to the development of the visual arts and current critical theory. It aims to develop a sense of visual awareness by as wide a range of the study of art as possible. The program is designed for students preparing to continue professionally as artists, as critics, as historians, as curators in museums, and as teachers, as well as for students who, while not planning to make the study of art their vocation, have a serious interest in the theory, practice, and history of the visual arts.

The distinguishing characteristics of the program leading to the Bachelor of Arts degree lie in the interrelated approach to studio practice, history, and criticism. The student majoring in art experiences the creative aspects of art by learning to think with the materials and techniques of his medium. He experiences, furthermore, the historical continuum of art as a research source and cultural achievement. And finally he engages in critical exercise which is essential to achieving the vital balance between the perceptual and conceptual in the creative process. The aim of the program in the visual arts is to enable the student to apply himself to any visual situation (studio, historical, critical) rather than to apply prelearned techniques or a rigid intellectual pattern.

Requirements for the Bachelor's Degree

University Requirements See page 23.

School Requirements: None.

Departmental Requirements

Studio Major: One years work in visual fundamentals (Art 30A-B-C); one years survey in history of art (Art 40A-B-C); two courses in modern art to be taken the first year (Art 108, 109, 109N, 129); six upper-division studio courses (Art 145 through 198); two additional upper-division studio or art history and

criticism courses (Art 100 through 198); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass basis).

Art History Major: One years survey in history of art (Art 40A-B-C); nine upper-division courses in art history, with at least one course in each of the following areas: Ancient (Art 100, 100N, 101, 102), Medieval (Art 103, 103N), Renaissance (Art 104, 104N, 105, 105N), Baroque (Art 106, 106N, 107) and Modern (Art 108, 108N, 109, 109N, 110N, 128, 129); two studio art courses; one Special Studies in History and Criticism of Art in senior year (Art 199); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass basis).

Graduate Program

Master of Fine Arts in Art: See page 111.

Art Faculty

Larry Bell, *Lecturer in Art*
Ed Bereal, *Lecturer in Art*
Vija Celmins, *Lecturer in Art*
Tony DeLap, *Associate Professor of Art*
Robert Irwin, *Lecturer in Art*
John Paul Jones, *Lecturer in Art*
Craig Kauffman, *Lecturer in Art*
Phil Leider, *Lecturer in Art*
John Mason, *Associate Professor of Art*
David Metzgar, *Assistant Professor of Art*
Robert Morris, *Lecturer in Art*
Edward Moses, *Lecturer in Art*
Beverly O'Neill, *Assistant Professor of Art*
Barbara Rose, *Lecturer in Art*
Allen Rosenbaum, *Lecturer in Art*
Frank Roth, *Lecturer in Art*
Moira Roth, *Assistant Professor of Art*
Robert Smithson, *Lecturer in Art*
David Thomason, *Assistant Professor of Art*

Lower-Division Courses in Art

30A-B-C Visual Arts Fundamentals (1-1-1) F, W, S
- **30A Fundamentals of drawing and pictorial structure** (1) F
- **30B Theory of color and two-dimensional design** (1) W
- **30C Three-dimensional design** (1) S

40A-B-C History of Art (1-1-1) F, W, S
46 The Nature of Architecture (1)
50A-B-C Drawing (1-1-1) F, W, S
60A-B-C Painting (1-1-1) F, W, S
70A-B-C Sculpture (1-1-1) F, W, S
86A-B-C Ceramics (1-1-1) F, W, S

Upper-Division Courses in Art

Courses in the following 100-109 sequence will include such topics as: The Arts of Crete and Early Greece, Roman Architecture, Early Christian and Byzantine Art, Gothic Architecture, Italian Renaissance Sculpture, Baroque Painting, The Rococo, Impressionism, and 20th-Century Painting.

The topics within a given area will vary from quarter to quarter; hence if the topic varies each course may be repeated for credit. Art 40A-B-C *is prerequisite.*

100 Studies in Ancient Art (1)
101 Studies in Greek Art (1)
102 Studies in Roman Art (1)
103 Studies in Medieval Art (1)
104 Studies in Southern Renaissance Art (1)
105 Studies in Northern Renaissance Art (1)
106 Studies in Baroque Art (1)
107 Studies in 18th-Century Art (1)
108 Studies in 19th-Century Art (1)
109 Studies in 20th-Century Art (1)
110 Studies in American Art (1)
111 Studies in Primitive Art (1)
112 Studies in Oriental Art (1)

Art 40A-B-C is not prerequisite for the following 100N sequence courses:

100N Ancient Art (1)
103N Medieval Art (1)
104N Italian Renaissance (1)
105N Northern Renaissance (1)
106N Baroque (1)
108N 19th-Century Art (1)
109N 20th-Century Art (1)
110N 20th-Century Architecture (1)
112N Oriental Art (1)

127 History of Design (1)
128 Art and Technology (1)
129 New American Art (1)
140 Criticism of Art (1)

All advanced problems, special studies, and tutorial courses may be repeated for credit.

145 Advanced Problems in Design (1)
Prerequisites: Art 30A-B-C.

150 Advanced Problems in Drawing (1)
Prerequisites: Art 30A-B-C and 50A-B-C.

160 Advanced Problems in Painting (1)
Prerequisites: Art 30A-B-C and 60A-B-C.

170 Advanced Problems in Sculpture (1)
Prerequisites: Art 30A-B-C and 70A-B-C.

180 Problems in Graphic Arts (1)

185 Design and Typography (1)

186 Advanced Problems in Ceramics (1)
Prerequisites: Art 30A-B-C and 86A-B-C.

190 Studio Problems (1)

191 Studio in Drawing (1)

192 Studio in Painting (1)

193 Studio in Sculpture (1)

194 Studio in Graphic Arts (1)

195 Art Museum Problems (1)

196 Tutorial in Art History (1)

198 Studio in Ceramics (1)

199 Special Studies in the History and Criticism of Art (1)
Senior Art History majors only.

Graduate Courses in Art

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Painting (1)

211 Graduate Studio: Sculpture (1)

212 Graduate Studio: Ceramics (1)

214 Graduate Studio: Graphic Arts (1)

215 Graduate Studio: Problems (1)

220 Seminar in Art History (1)

230 Seminar in Problems of Contemporary Art (1)

240 Graduate Projects (1)

250 Directed Reading (1)

260 Thesis (1)

DANCE

The program in dance provides basic studio experiences in the fundamental knowledge and techniques of classical ballet and of contemporary dance movements. The classical academic approach to ballet adheres to those principles developed from Noverre through Petipa and Cecchetti, modified to accommodate our current understanding of those laws of physics and of the human anatomy applicable to the study of dance. The workshops in contemporary dance explore and extend the various approaches to modern dance and jazz, concentrating on physiological and rhythmic problems encountered in contemporary choreography. Studies in pre-classic dance forms and their musical structures provide additional workshop experiences as well as significant research materials for choreographic problems. Theoretical and historical courses complement the practical work in workshops, choreography, and per-

formance. The program is designed for students preparing to continue professionally as dancers, as choreographers, and as teachers, as well as for students who, while not planning to make the study of dance their vocation, have a serious interest in the theory, practice, and history of dance.

The traditional technique of classical ballet constitutes a craft and style that serve not only as a physiological center for the logical training of the body, but also as a basic language of movement for the choreographer. Workshop experiences build progressively on the basic techniques of ballet and extend through the contemporary idioms of jazz, modern, and free-style. The aim is to develop kinetic resources, precision, flexibility, and freedom in an eloquently coordinated and intelligently responsive body.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Placement Examination: Transfer Students.

Inasmuch as the level of performance is generally determined by the length of time in study, all transfer students must anticipate meeting the total performance requirements for the B.A. degree. All transfer students must take placement examinations. Students deficient in level of performance should plan to extend their studies in order to meet performance requirements.

Departmental Requirements

Performing Major: Four years studio work in ballet (Dance 30A-B-C, 35A-B-C, 130A-B-C, 135A-B-C); three years studio work in free-style (Dance 40A-B-C, 45A-B-C; and 140 for three quarters); two years studio work in jazz (Dance 50A-B-C, 55A-B-C); one years work in theory (Dance 20A-B-C); one years work in music for dancers (Dance 120A-B-C); one course in dance notation (Dance 65A); three courses in history of world dance (Dance 110A-B-C); three courses in choreography (Dance 155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Teaching, Criticism, or Choreography Major: Three years studio work in ballet (Dance 30A-B-C, 35A-B-C, 130A-B-C); two years studio work in free-style (Dance 40A-B-C, 45A-B-C); one years studio work in jazz (Dance 50A-B-C); one years work in theory (Dance 20A-B-C); one years work in music for dancers (Dance 120A-B-C); three courses in history of world dance (Dance 110A-B-C); three courses in dance notation (Dance 65A-B-C); three courses in choreography (Dance 155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Graduate Program

Master of Fine Arts in Dance: See page 112.

Dance Faculty

Eugene Loring, *Professor of Dance and Chairman of Dance*
Donald Bradburn, *Lecturer in Dance*

Jack Kauflin, *Lecturer in Dance*
Olga Maynard, *Lecturer in Fine Arts*
June Morris, *Lecturer in Dance*
James Penrod, *Assistant Professor of Dance*
Janice Gudde Plastino, *Assistant Professor of Dance*
Barbara Plunk, *Lecturer in Dance*
Joe Tremaine, *Lecturer in Dance*

Lower-Division Courses in Dance

20A-B-C Theories of Dance (1-1-1)
Offered alternate years with Dance 120A-B-C. Open only to students enrolled in workshop courses.

30A-B-C Studio Workshop in Ballet I (½-½-½)

35A-B-C Studio Workshop in Ballet II (½-½-½)
Prerequisites: Dance 30A-B-C (Ballet I).

40A-B-C Studio Workshop in Free-Style I (½-½-½)

45A-B-C Studio Workshop in Free-Style II (½-½-½)
Prerequisites: Dance 40A-B-C (Free-Style I).

50A-B-C Studio Workshop in Jazz I (½-½-½)
Prerequisites: Dance 40A-B-C.

55A-B-C Studio Workshop in Jazz II (½-½-½)
Prerequisites: Dance 50A-B-C (Jazz I).

65A-B-C Dance Notation (1-1-1)

Upper-Division Courses in Dance

110A-B-C History of World Dance (Prehistoric to Contemporary) (1-1-1)
Offered alternate years with Dance 112A-B-C.

112A-B-C History of Theatre Dance (Renaissance Ballet to Contemporary) (1-1-1)
Offered alternate years with Dance 110A-B-C.

120A-B-C Music for Dancers (1-1-1)
Offered alternate years with Dance 20A-B-C.

125 Criticism of Dance (1)
May be repeated for credit.

130A-B-C Advanced Studio Workshop in Ballet III (½-½-½)
Prerequisites: Dance 35A-B-C (Ballet II).

135A-B-C Advanced Studio Workshop in Ballet IV (½-½-½)
Prerequisites: Dance 130A-B-C (Ballet III).

140 Advanced Studio Workshop in Free-Style (½)
May be repeated for credit. Prerequisites: Dance 45A-B-C (Free-Style II).

150 Advanced Studio Workshop in Jazz (½)
May be repeated for credit. Prerequisites: Dance 55A-B-C (Jazz II).

155A-B-C Choreography I (1-1-1)

160 Advanced Dance Performance (1)
May be repeated for credit.

180A-B-C Choreography II (1-1-1)

185A-B-C Choreography III (1-1-1)

190 Studio Tutorial in Ballet (½)
May be repeated for credit. Prerequisites: Dance 130A-B-C (Ballet III).

191 Studio Tutorial in Free-Style (½)
May be repeated for credit. Prerequisite: Dance 140 (Advanced Studio Workshop in Free-Style).

192 Studio Tutorial in Jazz (½)
May be repeated for credit. Prerequisite: Dance 150 (Advanced Studio Workshop in Jazz).

193 Studio Tutorial in Choreography (1)
May be repeated for credit. Prerequisites: Dance 185A-B-C (Choreography III).

194 Tutorial in History of Dance (1)
May be repeated for credit. Prerequisites: Dance 110A-B-C, 120A-B-C, 180A-B-C.

195 Tutorial in Dance Notation (1)
May be repeated for credit.

198 Dance Workshop (1)
May be repeated for credit.

Graduate Courses in Dance

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Ballet (½)

211 Graduate Studio: Free-Style (½)

212 Graduate Studio: Jazz (½)

213 Graduate Studio: Choreography (1)

220 Seminar in Dance History (1)

230 Seminar in Theories of Dance (1)

231 Seminar in the Teaching of Dance (1)

240 Graduate Projects (1)

250 Directed Reading (1)

260 Thesis (1)

DRAMA

The program leading to the Bachelor of Arts in drama provides the professional training and the liberal study essential to attaining the highest standards in theatre. Each major in drama experiences exacting and rigorous training in the mutually interrelated areas of the theatre: performance, design, literature, history, and criticism. The curriculum constantly relates studio practice, technical resources, and productional techniques to the development of dramatic literature and current critical theory. The student specializes during the last two years of study in acting, directing, scene design, costume design, or criticism. Majors in drama are expected to undertake extensive studies in art, dance, and music.

The continuous production of plays, musicals, operettas, and operas constitutes the major activity of the department. Students are treated as members of a theatrical organization and they acquire experiences in all phases of

theatrical production in a professionally disciplined atmosphere. Dramatic production centers on an exhaustive analysis of the script, and on the challenge of communicating the complexities of the plan to an audience in a unified and meaningful production.

The program is designed for students preparing to continue professionally as actors, directors, designers, critics, and teachers, as well as for students who, while not planning to make the study of theatre their vocation, have a serious interest in the literature, theory, and practice of drama.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements

One years survey in the development of dramatic literature (Drama 40A-B-C); one year in acting (Drama 30A-B-C); one year in design (Drama 100A-B-C); two upper-division courses in dramatic literature (140 through 150); six upper-division courses in addition to the two in dramatic literature mentioned above (these may be in studio work and/or in dramatic literature, playwriting, film writing, and criticism); three courses in Fine Arts outside the departmental major, including two consecutive quarters (which are equivalent to one course) in dance (these courses may be taken on Pass/Not Pass); participation (acting or technical) in at least one major University Theatre production a year (Drama 160).

Graduate Program

Master of Fine Arts in Drama: See page 114.

Drama Faculty

Ian Bernard, *Lecturer in Drama*
Peter Church, *Lecturer in Drama*
Robert S. Cohen, *Associate Professor of Drama*
Curt Conway, *Lecturer in Drama*
John Elliott, *Production Manager*
Clayton Garrison, *Professor of Drama and Dean of Fine Arts*
Cameron Harvey, *Instructor in Drama*
William Inge, *Professor of Drama*
Lotte Lenya, *Lecturer in Drama*
Herbert Machiz, *Lecturer in Drama*
Richard Triplett, *Associate Professor of Drama*

Lower-Division Courses in Drama

20 The Nature of Drama: Structure and Style (1)
25 Shakespeare (1)
30A-B-C Acting (1-1-1)

30A Movement, Improvisation, Theatre Games
30B Characterization and Scenes
30C Performance Technique
32 Playwriting (1)
Same as English Wr 32.
40A-B-C Development of Drama (1)
Same as Comparative Literature 40.
40A Greek Drama through Shakespeare
40B Restoration Drama through Ibsen
40C Contemporary Drama

Upper-Division Courses in Drama

100A-B-C Design for Theatre (1-1-1)
100A Costume Design
100B Scene Design
100C Lighting Design
105A-B-C Technical Production (1-1-1)
105A Costume
105B Scenery
105C Lighting
109 History of Film
Same as Art 109.
112 Advanced Playwriting (1)
Prerequisite: Drama 32. Same as English Wr 112. May be repeated for credit.
114 Film Writing (1)
May be repeated for credit.
115A-B Film Making (1-1)
Prerequisite: Interview with instructor.
116 Film Criticism (1)
120A-B History of Design in Theatre (1-1)
130 Advanced Acting (1)
Prerequisites: Drama 30A-B-C and audition. May be repeated for credit.
132A-B-C Speech for the Theatre (1-1-1)
140 Contemporary American Drama (1)
141 Contemporary British Drama (1)
142 Contemporary Continental Drama: Theatre of the Absurd (1)
143 Greek Drama (1)
144 Medieval and Tudor Drama (1)
Same as English 103.
145 Elizabethan and Jacobean Drama (1)
Same as English 103.
146 Shakespeare (1)
Same as English 103.
147 Restoration and Eighteenth-Century Drama (1)
Same as English 103.
148 Modern British Drama: 1870-1940 (1)
Same as English 103.

149 Modern American Drama: 1870-1940 (1)
Same as English 103.

150 Realism and Revolt: Ibsen to O'Neill (1)

151 Advanced Theatre Design (1)
May be repeated for credit.

152 Advanced Lighting Design (1)
May be repeated for credit

154 Costuming for the Theatre (1)
May be repeated for credit.

155 Advanced Costume Design for Theatre (1)
May be repeated for credit.

160 Advanced University Theatre (1)
May be repeated for credit.

165 Music Theatre Workshop (1)
May be repeated for credit.

166 History of Operetta and Musical Theatre (1)

170 Directing (1)
May be repeated for credit.

175 Staging Shakespeare (1)

180 Dramatic Criticism (1)

182 History of Dramatic Criticism (1)

185 Advanced Directing (1)
May be repeated for credit.

186 Projects in Film Making (1)
Prerequisites. Drama 115A-B and permission of instructor. May be repeated for credit.

The following courses may be repeated for credit:

190 Studio in Acting (1)

191 Studio in Directing (1)

194 Tutorial in Criticism (1)

195 Studio in Production (1)

197 Tutorial in Dramatic Literature (1)

198 Drama Workshop (1)

Graduate Courses in Drama

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Acting (1)

211 Graduate Studio: Directing (1)

212 Graduate Studio: Playwriting (1)

213 Graduate Studio: Design (1)

214 Graduate Studio: Film Writing (1)

215 Graduate Studio: Film Making (1)

220 Seminar in Dramatic Literature (1)

221 Seminar in Criticism (1)

222 Seminar in Theatre History (1)
230 Seminar in Contemporary Theatre (1)
240 Graduate Projects (1)
250 Directed Reading (1)
260 Thesis (1)

MUSIC

The program for the Bachelor's Degree with a major in music is designed for two main classes of students: those who wish to obtain a sound background in music leading to a terminal degree and those who wish to obtain a thorough preparation for undertaking graduate work in one or more of four broad fields: musicology, composition, music performance, and teaching. The program provides intensive training in three mutually dependent areas as related components of a total musical experience: performance and musicianship, the theory of music, and the history of music. A knowledge of all three of these areas is indispensable and minimal for a successful career in music.

Entering majors are expected to have competence in the practice of music — in reading and performing. Basic to the program for the graduating major is an effective command of the piano: the performance at sight of moderately difficult works. Students may demonstrate this skill by examination.

Performance requirements include a senior recital, instrumental or vocal, and participation in the chorus, orchestra, or in chamber music during each of the student's four years.

Beyond the specific goals outlined above and the requirements listed below, the student in music, through cooperative programs undertaken in conjunction with the other parts, achieves an awareness of the relationship of music to those other arts and of the various roles of music in society, both past and present.

Entrance Requirements

At the commencement of the student's freshman year he will be given an entrance examination to determine whether he meets the requirements of the department as stated below. After two years, the faculty will meet as a jury to determine whether the student is making sufficient progress to qualify him as an upper-division music major. All transfer students must take placement examinations.

Voice Majors

Recommend at least two years private study and/or participation in choral or orchestral ensemble and facility at the keyboard. Background in Italian, French, and German art songs is recommended.

Piano Majors

The requirements for an entering piano major are that the candidate should have mastered a Haydn or Mozart sonata, a two-part invention of Bach, and all the major and minor scales and arpeggios.

Woodwinds

Sustained tone production, precise intonation over a dynamic range from *pianissimo* to *fortissimo*, control of breath, tongue, and double and triple tongue attacks over the entire range of the instrument, all major and minor scales and arpeggios *legato* and *staccato* commensurate with the range and technique of the instrument, are required. The student should be able to play and read a repertoire of a difficulty comparable to the earlier symphonies of Haydn, Mozart, Beethoven, and Schubert, and should demonstrate knowledge of the sonata literature for his particular instrument.

Brass

Essentially the same requirements as for woodwinds.

Percussion

Mastery of rudimentary drum techniques and a knowledge of the piano comparable to grade three is required.

Strings

Clear tone production, precise intonation with and without vibrato, controlled vibrato, slurred, *detache, loure, staccato* and simple *spiccato* bow strokes, knowledge of all major and minor scales and arpeggios are highly desirable. The student should also be able to satisfy the same general repertoire requirements listed above under woodwinds.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements

Two years work in theory (Music 30A-B-C, 130A-B-C); two years work in musicianship (Music 5A-B-C, 15A-B-C; Music 5A-B-C to be taken concurrently with 30A-B-C and Music 15A-B-C to be taken concurrently with 130A-B-C); one years work in history and literature of music to be preceded by music 30A-B-C (Music 40A-B-C); one years work in counterpoint (Music 135A-B-C); one years work in form and analysis (Music 155A-B-C); three upper-division courses in history and criticism of music (Music 140 through 145, 152A-B-C); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass); command of piano; participation in the chorus, orchestra, or in chamber music each year; a senior recital; and a senior examination covering an assigned representative repertory drawn from the total history of music.

Graduate Program

Master of Fine Arts in Music: See page 115.

Music Faculty

H. Colin Slim, *Professor of Music and Chairman of Music*
Maurice Allard, *Associate Professor of Music and Conductor of the University Chorus*

Lawrence Gordon, *Lecturer in Music*
William Holmes, *Associate Professor of Music*
Arnold Juda, *Lecturer in Music*
Peter Odegard, *Associate Professor of Music and Conductor of the University Orchestra*
Thomas Whitney, *Lecturer in Music*

A professional tutorial staff in vocal and instrumental music supplements the staff.

Lower-Division Courses in Music

5A-B-C Musicianship I (½-½-½)

10 Basic Piano (½)
For music majors only. May be repeated for credit.

15A-B-C Musicianship II (½-½-½)

30A-B-C Theory I (1-1-1)

40A-B-C History and Literature of Music (1-1-1)
Prerequisite for Music Majors only: Music 30A-B-C

40A Medieval and Renaissance

40B Baroque and Classical

40C Romantic and Contemporary

50A-B-C Composition (1-1-1)

65 Literature for Keyboard (½)

66 Literature for String Instruments (½)

67 Literature for Wind Instruments (½)

68 Vocal Literature (½)

Upper-Division Courses in Music

130A-B-C Theory II (1-1-1)

135A-B-C Counterpoint (1-1-1)
Offered alternate years with Music 155A-B-C.

138A-B-C Fugue (1-1-1)

Courses in the following 140-145 sequence are for music majors and will include such topics as: The Motet in the 13th and 14th Centuries, Renaissance Keyboard Music, The Cantatas of Bach, The 18th-Century Symphony, Early Romantic Opera, Schoenberg, Bartok, and Stravinsky. The topics will vary from quarter to quarter; hence if the topic varies each course may be repeated for credit.

140 Studies in Medieval Music (1)

141 Studies in Renaissance Music (1)

142 Studies in Music of the Baroque Period (1)

143 Studies in Music of the Classical Period (1)

144 Studies in Music of the Romantic Period (1)

145 Studies in Music of the 20th Century (1)

150 Advanced Composition (1)
May be repeated for credit.

152A-B-C History of Opera (1-1-1)

155A-B-C Form and Analysis (1-1-1)
Offered alternate years with Music 135A-B-C.

All courses in the 160-169 sequence may be repeated for credit.

160 University Orchestra (1)

161 Chamber Ensemble (½)

162 University Chorus (½)

163 Vocal Performance (½)
By audition only. Music 162 must be taken concurrently.

164 Opera Workshop (½)

165 Advanced Literature for Keyboard (½)

166 Advanced Literature for String Instruments (½)

167 Advanced Literature for Wind Instruments (½)

168 Advanced Vocal Literature (½)

169 Conducting (1)

170 Orchestration (1)

171 Chamber Singers (½)

172 Chamber Orchestra (½)

173 Theatre Orchestra (1)

180 Music Criticism (1)

190 Studio Tutorials in Music (½)
Piano, strings, winds, voice, conducting.

191 Tutorial in Music (1)
May be repeated for credit.

198 Music Workshop (1)
May be repeated for credit.

Graduate Courses in Music

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Vocal Literature (1)

211 Graduate Studio: Instrumental Literature (1)

212 Graduate Studio: Composition (1)

220 Seminar in History of Music (1)

230 Seminar in Contemporary Music (1)

240 Graduate Projects (1)

250 Directed Reading (1)

260 Thesis (1)

School of Humanities

Hazard Adams,
Dean

Theodore Brunner, *Associate Dean for Undergraduate Study*
Robert L. Montgomery, *Associate Dean for Graduate Study*

The School offers majors in classics, classical civilization, comparative literature, English, French, German, Greek, history, humanities, Latin, linguistics, philosophy, Russian, and Spanish. It offers elementary courses in Chinese, Hebrew, Italian, and Portuguese.

Students with degrees in the various majors offered by the School proceed to graduate study in numerous fields including business, law, education, and medicine as well as directly into a great variety of professions.

Undergraduate Programs

The School as a whole makes the following requirements of freshmen and sophomores (in addition to the campus breadth requirements, p. 24):

1. Humanities 1A-B-C, taken in the freshman year (students who must take Subject A will take Humanities 1A-B-C in the sophomore year);
2. Two years of work in a single acceptable foreign language (through 2C) or equivalent competence;
3. Quarterly consultation with an assigned lower-division advisor and the advisor's approval for each course of study decided upon.

The corps of lower-division advisors in the School is designed to meet the special needs of freshmen and sophomores. The advisors in this group are particularly interested in undergraduate education and especially knowledgeable about University regulations, requirements in and outside the School, course content, options to major, and other matters that may present difficulties. Students in the School do not elect majors until the last quarter of the sophomore year, at which time each student is assigned an advisor in the major chosen. Until that time the lower-division advisor is prepared to help the student keep options to major open as long as possible, plan a coherent program of humanistic study, and reach an eventual decision about the major.

Each major in the School sets certain requirements. Generally each major offers a years course which is both an introduction to the discipline and a prerequisite to the major itself. Students who plan wisely with their advisors will construct programs that include a good number of such courses.

Undergraduate students in the School of Humanities participate in the affairs of the School in a number of ways: by serving on committees of various departments, by sitting with the faculty in its meetings, and by serving on the student undergraduate advisory committee, which directly advises the Dean.

Graduate Programs

The School offers a wide program of graduate degrees. Although the Master's Degree is offered in most departments, the programs emphasize the Ph.D. and give preference in admission to those students who intend to take that degree. An exception is the two-year Master of Fine Arts in creative writing. At present the Ph.D. is offered in comparative literature, English, French, history, philosophy, and Spanish. Programs in classics, German, and humanities are being planned. The Master's Degree is offered in all the programs mentioned above and in German.

In addition to the seminars offered by the various departments, the School sponsors a number of interdisciplinary seminars annually. These courses are taught jointly by faculty members from various departments.

A limited number of students are accepted annually to study for the secondary and primary teaching credential. This program is a cooperative effort by the School and the Office of Teacher Education (see p. 300).

Graduate students in the School of Humanities participate in the affairs of the School in a number of ways: by serving on committees of the various departments, by sitting with the faculty in its meetings, and by serving on the student graduate advisory committee, which directly advises the Dean.

Degrees Offered in the School

Classics	B.A.
Classical Civilization	B.A.
Comparative Literature	B.A., M.A., Ph.D.
English	B.A., M.A., M.F.A., Ph.D.
French	B.A., M.A., Ph.D.
German	B.A., M.A.
Greek	B.A.
History	B.A., M.A., Ph.D.
Humanities	B.A.
Latin	B.A.
Linguistics	B.A.
Philosophy	B.A., M.A., Ph.D.
Spanish	B.A., M.A., Ph.D.

Undergraduate Honors

Students are nominated for honors on the basis of scholarship, research, and special achievements. Generally, to be nominated the student must achieve a grade point average of at least 3.20, perform with distinction on such comprehensive examinations as are given in the major, and receive strong recommendation from faculty members.

UNDERGRADUATE MAJOR IN HUMANITIES

The major in Humanities, established to begin operation in fall 1971, accommodates students who want to organize their undergraduate education around some special interest in a topic, a field, or a problem which is interdisciplinary in scope. At the end of his sophomore year the student, in consultation with the Humanities Major Committee, will devise an individually tailored set of "course requirements" not all of which need be offered in the Humanities School. The Committee will assign him an advisor on the basis of the student's own preference. At the end of his senior year the student will prepare under the advisor's supervision a long paper in the area of his special major. Inquiries by third-quarter sophomores should be addressed to Guy Sircello, Associate Professor of Philosophy, Chairman of Humanities Major Committee.

Undergraduate Courses in Humanities

Humanities 1A-B-C The Humanities Core Course (2-2-2)
A two-credit year-long sequence required of all Humanities majors and open only to those who have passed the Subject A requirement. Majors who have satisfied the Subject A requirement at entrance are required to take the course their first year; majors who have not satisfied the Subject A requirement at entrance are required to take the course as sophomores.

From year to year different problems of mutual concern to the various humanistic disciplines are taken up, with emphasis placed on the careful reading of certain major texts which bear on these problems and on the development of the ability to think clearly and write well about the issues they raise. A writing program is an integral part of the course.

The course is under the direction of Gordon Brittan, Associate Professor of Philosophy, the writing program under Shirley Van Marter, Assistant Professor of English.

Humanities 2 (1)
A course offered on the general subject of the nature of humanistic disciplines.

Humanities 101A-B-C (1-1-1), may be repeated when subject changes.
The undergraduate Humanities colloquia. Offered in various subjects of an interdisciplinary nature, generally for juniors. In 1971-72 it will include:

Section 1 (A and B) 2 quarters (winter and spring):

Postwar Social Criticism in America
An introduction to the argumentative and rhetorical forms of social criticism and their dominant political, social, and psychological functions in postwar America. Open to sophomores. Students interested should consult Mr. Clecak.

Section 2 (A-B-C) 3 quarters (fall, winter, and spring):

Images and Manifestations of Socialism
An historical and initial survey of socialist theory from (roughly) the Enlightenment to the present. The main focus will be on the interplay among socialist ideals, ideologies and politics in America and in parts of the socialist world. Students interested should consult Mr. Clecak.

Humanities 197 (varying credit)
Individually arranged field study.

Humanities 198 (varying credit)
Directed group study on special topics.

Humanities 199 (varying credit)
Directed research for senior Humanities majors.

Graduate Courses in Humanities

Graduate courses in Humanities are under the direction of the School's Associate Dean for Graduate Study and a committee of faculty.

Humanities 291 (1)
Under this number the School offers a group of seminars and colloquia in interdisciplinary topics or in topics in a particular discipline that are designed for study by students in other disciplines.

DEPARTMENT OF CLASSICS

Undergraduate Programs

The Department of Classics aims to provide for the undergraduate student an exposure to the origins and heritage of western civilization. The Department is committed to a twofold purpose: (1) to transmit the culture, ideals, and attitudes of classical civilization through the Greek and Roman languages and literatures and (2) to awaken in the non-Classics major a cognizance of the values and influences of Greece and Rome on our own civilization through courses in classical literature in translation, civilization, mythology, and religion. The Department offers both a major in Classics (a combined Greek and Latin major) and a major in Classical Civilization, as well as majors in Greek and Latin. Students are encouraged to consult with the Classics faculty regarding the appropriate choice of major and design of program.

For the Classics major, the basis for studying the Classics must be competency in one or both of the classical languages. The Classics program is designed to provide the student with this competency as rapidly as possible, so that by the end of the first year he has already been introduced to some of the major classical authors in the original. From then on, the student is concerned with analyzing, interpreting, and appreciating the literatures of ancient Greece and Rome and will devote himself to the theories and techniques of literary and textual criticism. In addition, he will obtain a rich background in such ancillary disciplines as ancient history, archaeology, classical art, drama, philosophy, and religion.

The major in Classical Civilization was designed for those students who have no plans to pursue graduate studies in the classical languages, yet wish to obtain an undergraduate degree based on a sound exposure to the classical world. The nucleus of this major is nine courses taken within the department, including a minimum of one year of one of the classical languages. The student is also required to take six courses in disciplines closely related to the field of Classics, i.e., ancient history, philosophy, and art. Beyond the required courses, the student is encouraged to take other suggested courses in history, drama, comparative literature, and art.

The student planning to major in Greek, Latin, Classics, or Classical Civilization should obtain a copy of the pamphlet "The Classics" and/or "Major in Classical Civilization" from the departmental office.

Students entering UCI with previous Greek or Latin training will be given advanced standing as follows: In general, one year of high school work is equated with one quarter of UCI work. Thus, students with one, two, three, and four years of high school Latin will enroll in Latin 1B, 1C, 2A, and 2B respectively. Exceptions to this ruling can be made but must have the approval of the Department Chairman. Students with high school training in the classical languages are encouraged to consult with the Classics staff before enrolling in Classics courses.

The Department adheres to the policy of giving its students an opportunity to participate fully in the departmental decision-making process. Two student representatives, elected from and by the undergraduate majors, participate in all departmental faculty and committee meetings; these student representatives serve not only in an advisory function, but hold the same voting privileges as the non-tenured members of the department. They are responsible for maintaining close liaison with their constituency, for representing the students' interest in curriculum and personnel matters, and for the evaluation of both the academic program and the academic staff.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

Four separate majors: Greek, Latin, Classics, and Classical Civilization.

Greek: Greek 2A-B-C, 10, 101A-B-C; three more courses from Greek 100-199; Classics 151.

Latin: Latin 2A-B-C, 10, 101A-B-C; three more courses from Latin 100-199; Classics 151.

Classics: Greek (or Latin) 2A-B-C; Greek (or Latin) 10; four courses from Greek (or Latin) 100-199; Latin (or Greek) 1A-B-C, 2A-B-C; one course of Latin (or Greek) 100-199.

Classical Civilization: Latin (or Greek) 1A-B-C; Classics 141, 151, 152, 153; Philosophy 120A, 121 (or 122); Art 101, 102; History 110A-B or History 112A-B.

Planning a Program of Study

The Department believes in close consultation with students on academic advising, program planning, and discussion of goals and direction. Students planning to major in Greek, Latin, Classics, or Classical Civilization are strongly urged to consult with the departmental faculty at the earliest possible moment, in order to familiarize themselves with the nature of the various programs.

Graduate Program

The planned Classics Ph.D. program is based upon the belief that close and constant individual attention to a student offers greater and more extensive educational opportunities than classroom instruction.

Under the program, a number of graduate students equal to the number of faculty members of professorial rank are admitted, each of whom is assigned

to a single faculty member. This faculty member acts as the student's "preceptor" for the four years of the graduate program. The preceptor is responsible for the development and progress of his student in three areas: comprehensive knowledge of the discipline, research competence, and teaching ability. Through frequent conference, he maintains constant control over the student's progress, provides assistance in the solving of problems, and responds to the student's needs as they arise.

In addition he involves his student with other faculty members in the Department for varying periods of time, dependent upon the nature of particular research problems and the areas of specialization of the faculty. This periodic exchange of students enhances the possibility of approaching a research topic from a variety of points of view and exposes the student to different techniques of research and interpretation. Although the shifting of students from faculty member to faculty member may occur for periods as long as weeks or months, the preceptor continues to have the overall responsibility for his student's progress within the program.

Students admitted to the program are expected to work directly toward the degree Doctor of Philosophy in Classics. Although the program provides for the Master of Arts in Classics, this degree is awarded only on a terminal basis to a student unable to meet the demands of the program. Generally, the student is expected to complete the Ph.D. program in four years; completion of the doctoral dissertation will be a prerequisite for leaving residence.

By the beginning of the second year of residence, doctoral candidates are expected to pass reading examinations in two modern foreign languages. Ordinarily, these examinations will be in French and German, although, dependent upon an individual student's area of specialization and interest, other appropriate foreign languages may be substituted.

There are no formal course requirements for the Ph.D. in Classics. However, the Department offers a single seminar, Classics 220, designed to accommodate themes and projects which involve all graduate students enrolled in the program as well as faculty outside of the Department, guest lecturers, and visiting professors temporarily affiliated with the Department. Its themes and projects vary, dependent upon student and faculty interest; its duration is not restricted by the academic quarter but may, in fact, be shorter or longer, dependent upon the nature of the theme or project.

Upon entering the program, each student is provided with a reading list of both primary and secondary materials. While this reading list requires of each student thorough familiarity with Classical literature, history, art, philosophy, and science, it is designed on an individual basis to provide for particular interests and predispositions in approaching the field of Classics. Under constant guidance from the preceptor, the student is expected to assimilate the prescribed materials on this reading list within a period of three years.

At the end of each year in residence, the student is required to pass a written examination designed to evaluate both his progress with the reading list and his development in his particular areas of interest and specialization. At the end of the third year in residence, the student is expected to pass oral qualifying examinations which cover comprehensively the entire field of Classics, but which also take into account the student's individual interests.

Beyond the annual examinations, the students enrolled in the program are evaluated on a monthly basis. The small size of the program and its emphasis on individual guidance and supervision permit a departure from the standard evaluation procedure dependent upon course grades only; instead, the Department employs a system of student evaluation based on progress dossiers. The dossiers contain copies of the student's written work, reports by the preceptor as well as the seminar instructor, and statements by temporary faculty supervisors and are evaluated monthly by the entire Classics faculty acting as an evaluation committee. The results of this monthly evaluation are communicated to the individual student with appropriate comment and recommendation. For purposes of maintaining official university records, grades are recorded for the student's performance in the seminars in which he enrolls.

A doctoral dissertation is required of all Ph.D. candidates. Normally, the student writes the dissertation under close supervision of his preceptor, although the entire Department of Classics faculty constitutes the dissertation committee responsible for accepting or rejecting the dissertation. Upon completion of the dissertation, the student is required to submit to an oral dissertation defense.

Classics Faculty

Theodore F. Brunner, Ph.D. Stanford University, *Associate Professor of Classics, Chairman of the Department, and Associate Dean of Humanities*

Luci Berkowitz, Ph.D. The Ohio State University, *Associate Professor of Classics*

Peter Colaclides, Ph.D. University of Athens, *Professor of Classics*

Richard I. Frank, Ph.D. University of California, Berkeley, *Associate Professor of Classics and History*

Ronald F. Kotrc, Ph.D. University of Washington, *Assistant Professor of Classics*

Robert M. McClure, Ph.D. University of California, Los Angeles, *Assistant Professor of Classics*

Lewis A. Sussman, Ph.D. University of North Carolina, *Assistant Professor of Classics*

David R. Thomason, M.A., M. Phil. University of London, *Acting Assistant Professor of Classics and Fine Arts*

Undergraduate Courses in Classics

Greek 1A-B-C Fundamentals of Greek (1-1-1)
The elements of Classical Greek grammar and syntax, with selected readings. 1C is devoted to selected readings from Greek authors.

Greek 2A-B-C Intermediate Greek (1-1-1)
Readings from Greek authors. 2A: Plato; 2B: Herodotus; 2C: Homer. Prerequisite: Greek 1C or equivalent.

Greek 10 Greek Prose Composition (1)
Prerequisite: Greek 1C or equivalent.

Greek 20A-B-C Intensive Greek (1-1-1)
Offered in alternate summer sessions, this course series covers, in eight weeks, the equivalent of Greek 1A-B-C.

Greek 99 Special Studies in Greek (1)
May be repeated. Prerequisite: consent of instructor.

Greek 101A-B-C Advanced Greek (1-1-1)
The third-year Greek sequence is devoted to the study of Greek drama. Prerequisite: Greek 2C or equivalent.

Greek 102A-B-C Proseminars in Greek Authors (1-1-1)
In the Greek 102 series the student engages in a thorough study of major Greek authors, e.g. Aristophanes, Thucydides, Homer, Euripides, Plato, and Pindar. The individual authors will change from year to year. Prerequisite: Greek 101C or equivalent.

Greek 198 Directed Group Study (1)
An investigation of special topics in Greek culture and civilization through directed reading and research. May be repeated. Prerequisite: consent of instructor.

Greek 199 Independent Studies in Greek (1)
May be repeated. Prerequisite: consent of instructor.

Latin 1A-B-C Fundamentals of Latin (1-1-1)
The elements of Latin grammar and syntax, with selected readings. 1C is devoted to selected readings from Roman authors.

Latin 2A-B-C Intermediate Latin (1-1-1)
Readings from Roman authors. 2A: Catullus; 2B: Cicero; 2C: Horace. Prerequisite: Latin 1C or equivalent.

Latin 10 Latin Prose Composition (1)
Prerequisite: Latin 2A or equivalent.

Latin 20A-B-C Intensive Latin (1-1-1)
Offered in alternate summer sessions, this course series covers, in eight weeks, the equivalent of Latin 1A-B-C.

Latin 99 Special Studies in Latin (1)
May be repeated. Prerequisite: consent of instructor.

Latin 101A-B-C Advanced Latin (1-1-1)
The third-year Latin sequence is devoted to the study of Virgil. Prerequisite: Latin 2C or equivalent.

Latin 102A-B-C Proseminars in Roman Authors (1-1-1)
In the Latin 102 series the student engages in a thorough study of major Roman authors, e.g. Lucretius, Cicero, Tacitus, Seneca, and Petronius. The individual authors will change from year to year. Prerequisite: Latin 101C or equivalent.

Latin 198 Directed Group Study (1)
An investigation of special topics in Roman culture and civilization through directed reading and research. May be repeated. Prerequisite: consent of instructor.

Latin 199 Independent Studies in Latin (1)
May be repeated. Prerequisite: consent of instructor.

Classics 99 Special Studies in Classics (1)
May be repeated. Prerequisite: consent of instructor.

Classics 141 Classical Historians and Historiography (1)
The development of historiography from its ethnographic and epic origins to its form as a major literary genre. All readings are in English.

Classics 151 Classical Literature in Translation (1)
A study of the major Classical Greek and Roman authors in English translation with a view to their place in literature and history and with consideration of their relationship to the cultural, philosophical, and artistic attitudes of Ancient Greece and Rome.

Classics 152 Classical Civilization (1)
Based from readings from Classical Greek and Roman authors in English translation and secondary sources as well as on visual aids, this course is a comparative study

of the principles and patterns of public life, the intellectual and aesthetic achievements of Greece and Rome, and the daily life and activities of ancient man.

Classics 153 Classical Mythology and Religion (1)
Study of the Greek and Roman divinities and religions in light of their impact on the pre-Christian and Christian world.

Classics 170 Medical Science in Antiquity: Readings from Biological and Medical Writers (1)
Theories of sense perception, respiration, and reproduction in the biological and medical writings of Hippocrates, Aristotle, Theophrastus, Galen, and others. Offered in summer session only.

Classics 198 Directed Group Study (1)
Investigation of special topics in Classical studies through directed reading and research. May be repeated. Prerequisite: consent of instructor.

Classics 199 Independent Studies in Classics (1)
May be repeated. Prerequisite: consent of instructor.

Graduate Courses in Classics

Classics 220 Classics Graduate Seminar (1)
Subject matter is variable. May be repeated for credit.

DEPARTMENT OF ENGLISH AND COMPARATIVE LITERATURE

The Department of English and Comparative Literature is concerned with the nature and value of literature, possible approaches to literary works, and the relation of literary criticism to the intellectual issues of the day. Fundamentally it is concerned with the humanistic problem of value. Thus its main literary concern is critical and theoretical. Though not alone in the task, the Department recognizes a continuing obligation to help all students to write the English language with clarity and grace.

Students are given the opportunity to participate in academic affairs through two elected student committees, one of undergraduates, one of graduates, which are concerned primarily with matters of personnel and curriculum, though they may become involved with other questions as well. The committees meet periodically with faculty committees of the Department, and the recommendations of student committees become matters of record which accompany any recommendations emanating from the Department. Each quarter, all students taking classes within the Department have the opportunity to evaluate the particular course and teacher.

Undergraduate Programs

The Department offers to the undergraduate essentially three areas of study:

1. **The Program in Literary Criticism,** where the emphasis is upon formal study of the variety of critical approaches and the reading and criticism principally of English and American literature.

2.**The Program in Writing,** which offers an emphasis on formal work in the writing of poetry, prose fiction, and/or drama, parallel readings, and a substantial experience in criticism. The aim of the program is to encourage the creative literary powers of the student and to introduce him to the discipline of imaginative writing. The Department also offers work in non-fiction and advanced work in expository writing.

3.**The Program in Comparative Literature,** which, though administratively a part of the Department, is basically interdisciplinary in its orientation, drawing on faculty and other resources from the fields of the various modern and classical literatures and drama. At UCI, Comparative Literature is regarded simply as the study of literature from the international point of view, rather than in the national framework made necessary by the traditional university. The consciousness of the modern educated man is the product of centuries of cultural heritage, including not only works of literature in his own tongue but world literature from Homer to Gide and Thomas Mann. The aim of the program is therefore to present the student's literary heritage to him in its proper proportions, transcending the limitations of the traditional university department. The student who completes a degree in Comparative Literature will thus have a competent grasp of the whole history of literature in its broad outlines and will be able to deal competently with literary texts, whatever their period or national origin, for his own pleasure or for professional use.

Since the Department's three areas of emphasis are not discrete entities, the student is invited to take work in all three, with an emphasis on one of the first two (toward a Bachelor's Degree in English) or a major (Bachelor's Degree) in the third area, Comparative Literature. A student of literature should recognize the importance of understanding literary problems of a theoretical nature, of developing a broad literary experience which transcends national boundaries, and of experiencing the problems of literary creation at first hand.

The Department assumes that the experience of literature, an understanding of the verbal culture and how it has developed, and the achievement of a high level of literacy are fundamental to a liberal education. By not stipulating a variety of prerequisites the Department invites students from all schools of the University to take advantage of its offerings. An acceptable level of ability in English composition (as described in the University requirement, p. 23) is the only prerequisite for many of the introductory undergraduate English courses.

Many of the courses offered, particularly those devoted to the historical periods of literature, may vary in specific content from year to year depending upon the plans of individual teachers. It is a principle of departmental offerings in literary periods that, since no course can possibly treat all of the major authors or important works of a given age, each teacher is charged with organizing classes and readings which provide basic understandings and point in proper directions.

The student intending to major in English or Comparative Literature should obtain a copy of *Undergraduate Study in English and Comparative Literature* from the Departmental office. The student intending to major in Comparative Literature should also obtain the Comparative Literature booklet from the Director of Comparative Literature.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

English: English 28A-B-C; CL 100 twice; CL 101; E 102 or CL 102 twice; four courses above 102, at least two of which must be 103's; competence in a foreign language equivalent to six quarters of work at Irvine plus one course in a foreign language where texts are read in the original language. Normally students electing a writing emphasis will take not quite as many of the period and genre courses but a total of more courses in English than the usual major. All students will be required to pass the Senior Comprehensive Examination.

Comparative Literature: Sufficient competence in a foreign language, either modern or classical, to be able to deal with any standard literary or critical text in that language with facility. If the student intends to continue with graduate work, it is highly recommended that he begin the study of a second foreign language before graduation.

A three-quarter lower-division sequence: CL 50A-B-C or English 28A-B-C.

About twelve literature or allied courses in addition, of which ten must be upper division: normally these will include CL 100, CL 101, either CL 102 or CL 103; suitable upper-division course work in the literature of a foreign language; appropriate study in English and American literature; and further study in literature or allied fields as recommended by the advisor. Passing performance in the Bachelor's Examination.

Planning a Program of Study

The student should plan, with his faculty advisor, a coherent program of courses, including independent study courses, undergraduate seminars, and workshops in writing (for students choosing a writing emphasis). All English and Comparative Literature majors must pass a senior comprehensive examination to graduate.

If the student intends to continue with graduate work, it is highly recommended that he begin the study of a second foreign language before graduation.

The Senior Comprehensive Examination in English

The purpose of this examination, as of any other, is to give students a chance to show how much and how well they have learned. This examination will, generally speaking, be designed so that a student may reveal any or all of the following: a) his ability to close intelligently, on the spot, with any given piece of literature; b) his knowledge of the general outlines of English and American literary history, including the more significant facts and dates; c) his understanding of the terms appropriate to literary discussion; and d) his knowledge of the works on the reading list. The examination will ordinarily require four hours and will be given on two successive days.

Every student should plan to take the examination in the quarter before the quarter in which he intends to graduate—normally the winter quarter of his

senior year. No student may take the examination more than three times, and no student who fails to pass after three attempts may receive a degree in English.

Copies of past examinations may be obtained in the Office of the Department of English and Comparative Literature.

The Bachelor's Examination in Comparative Literature

The Bachelor's Examination is given during the student's senior year. It is given to test his knowledge of literature, critical theory, and literary history and to investigate his competence in practical criticism as well as his ability to write clearly, succinctly, and convincingly on literary matters. Primarily, the student will be asked questions on works from the Comparative Literature Reading List and about the ways in which these works relate to each other.

The material describing the Senior Comprehensive Examination in English is also applicable (see above). The main difference between the two examinations lies in the reading lists on which the examinations are based.

Graduate Programs

The Department's three principal areas of work on the undergraduate level—criticism, comparative literature, and the art of writing—are reflected in the graduate programs: the M.A. and the Ph.D. in English with specific attention to criticism, the M.A. and the Ph.D. in Comparative Literature, and the M.F.A. in Writing. A committee of the Department, with the consent of the Graduate Dean, admits students to these programs. Each program has a Director appointed by the Chairman of the Department. Although the Department offers the M.A. degree, the rationale in California governing the relationship between the State Colleges and the University of California indicates that the major function of the University in graduate education is to educate Ph.D. candidates. Thus the Department encourages applications only from students who plan to pursue the Ph.D. in English or in Comparative Literature or who want to embark on the M.F.A. in Writing.

The Department assumes that there must be a vital intellectual relationship between professor and candidate; specific requirements for graduate degrees will be reached by consultation among members of the faculty and the candidate himself. The first-year graduate student or the candidate for the Master of Fine Arts in Writing plans a program with his advisor; the candidate for the Ph.D. plans with his advisor and a two-man committee. Candidates for literary degrees are encouraged to study philosophy, history, foreign languages and literatures, and the fine arts. A deliberate effort is made to maintain close administrative and intellectual relationships among the programs.

Candidates for all graduate degrees must meet requirements set down by the University of California. Applicants for graduate degrees in English and Comparative Literature must submit scores for the Graduate Record Examination (GRE) and the Advanced Test, Literature (ATL).

The Department is eager to encourage serious study and to establish a community of scholars. To these ends part-time graduate work is discouraged; only

in exceptional circumstances will students be permitted to undertake programs of less than six full courses during the academic year. The normal expectation, however, is enrollment in three courses each quarter. A full course load for teaching assistants is six quarter courses during the academic year.

The Department recognizes that virtually all of its graduate students will become teachers, primarily at the college or university level; and it believes that graduate departments should be training college teachers as well as scholars—indeed, that teaching and most literary scholarship complement one another. Thus the Department has initiated a program by which all its Ph.D. candidates, in English as well as in Comparative Literature, may gain supervised training— as teachers in the arts of writing and of criticism at various undergraduate levels as part of the formal seminar work required for the degree. M.F.A. candidates also have the opportunity of participating in this program.

All those interested in graduate study in the Department should obtain the brochure on graduate programs from the Departmental office.

English

Master of Arts in English

Each candidate for the M.A. will be assigned to a graduate advisor who will supervise his program. The M.A. plan of study includes (1) the completion of course work, as advised, for three quarters or the equivalent; (2) demonstrated proficiency in reading a designated foreign language; (3) the passing of a written examination upon a designated reading list. Exceptional students may be exempted from taking the examination by petitioning the Graduate Committee, which will review the student's performance and qualifications in arriving at its decision. All M.A. candidates will be required to know fundamental facts about the history of the English language. The candidate must take all of his formal work in courses, seminars, or conferences limited to graduate students.

Master of Fine Arts in English

The Master of Fine Arts (M.F.A.) in English is a degree awarded for creative writing in poetry, the short story, the novel, or drama. The M.F.A. program is based on the assumption that the best way for a promising writer to develop is to bring him together with other writers and encourage him to write.

The M.F.A. degree is normally conferred upon the completion of a two-year residence. During each of his quarters in the program the candidate will be enrolled in a creative writing workshop which will constitute two-thirds of his course load for that quarter. If he intends to teach after receiving his degree, the candidate should plan the rest of his program in such a way as to insure that he will be qualified to teach courses in literature.

In addition to his course work, the candidate will complete a book-length thesis of creative writing. He will also be required to pass a written examination on a reading list of literary works in the genre of his own writing.

Doctor of Philosophy in English

The program for the Ph.D. in English normally includes about two years of full-time enrollment beyond the B.A., three courses of which will normally be

in the graduate teaching program; proficiency in the reading of two acceptable foreign languages; the dissertation; and satisfactory performance on designated examinations.

The languages acceptable depend upon the nature of the student's program as determined by his advisors. Reading competence in one of these languages must be established in the first quarter of residence. Competence in the other language must be established well before the general examinations. Satisfactory work in courses in which literary translation is actually practiced must fulfill at least one of the language requirements. The necessity of competence in languages such as Old English is determined by the advisory committee in the light of the student's total program. All candidates for the Ph.D. will be required to know fundamental facts about the history of the English language and basic linguistic theory.

Upon completion of course work the student normally presents himself for general examinations on literary theory and criticism; on some particular literary form, genre, style, theme, or structure; a historical period; a group of authors; and a specific topic. The first four of these examinations are written, the fifth oral. The student has the opportunity to present his own choices for the examination, but the choices must enable him to demonstrate breadth of knowledge and literary understanding, and therefore must be approved by his advisory committee. Certain alternatives to this series of examinations may be allowed in special cases.

When the student satisfactorily completes the general examination, he is admitted to candidacy for the degree. As soon after completion of the general examination as is practicable, the student presents to his advisory committee for its approval an essay leading into his dissertation. Submission and acceptance of the dissertation complete the work for the Ph.D. All work for the Ph.D. degree must be in courses, seminars, or conferences limited to graduate students.

Comparative Literature

There are at least four avenues by which the UCI student may approach graduate work in Comparative Literature; students with Bachelor's Degrees from other institutions should have equivalent training:

a) The undergraduate major in Comparative Literature described above.
b) A normal English major in criticism, provided a sufficient background in at least one foreign language is gained. A beginning on a second foreign language is highly recommended.
c) A normal major in drama, with same provisos as b).
d) A normal major in a foreign language, provided a sufficient general background in world literature is gained.

Make-up work will be required before graduate studies can begin if one of these avenues has not been taken.

The study of Comparative Literature is much more specialized at the graduate than at the undergraduate level. The student becomes involved in the highly technical area of his personal research and in dealing with such problems as the development of genres, interrelations between literatures, the theory and

practice of translation, and other literary questions transcending national boundaries.

For the graduate student in Comparative Literature a professional competence in foreign languages is essential. At UCI we believe that French and German, to begin with, are essential equipment for the comparative scholar and that a classical language is indispensable for work in most of the traditional fields of literary study. French and German are usually required for all doctoral candidates, since these languages along with English are the accepted tools of international literary scholarship. But these "tool languages" are independent of the particular area in which the literary scholar chooses to specialize. He may need to master other languages as he moves farther into his subject. The underlying assumption in the whole plan of language requirements is that, after the tool languages have been mastered, the professional scholar's own interests should determine the specific kinds and degree of language skill he acquires.

At the graduate level, the nucleus of the foreign language requirement is the course CL 220, Problems in Translation. In this course, after a suitable theoretical preparation, the student plans and carries out a high-quality translation of a literary text. The text is necessarily one of a certain difficulty: perhaps metrical in the case of a modern work, perhaps involving historical problems or archaisms if it is a prose work. This translation, along with an introduction or other scholarly apparatus explaining and defending the technical decisions involved in the task, is then submitted as a paper for course credit.

Master of Arts in Comparative Literature

The student entering this Master of Arts program should complete course work for the equivalent of three quarters. This course work should include CL 220 (Problems in Translation) with project in either French or German and appropriate graduate-level work in English, foreign languages, drama, comparative literature, and other areas as counseled by the advisor. Soon after beginning graduate work the student, with the advice and approval of his advisor, will decide on a Field of Specialty which he wishes to emphasize in his progress toward the M.A. degree. (Normally this choice will be a kind of general or preliminary step toward the selection of an Area of Specialty for the Ph.D.).

Graduate study in Comparative Literature requires an exceptional facility in foreign languages, and the student should not attempt a Master's Degree without a thorough knowledge of one foreign language and literature and a considerable knowledge of a second language. Normally the greatest part of the student's work will involve the study of literary texts in the original languages.

At the end of his course work, normally about nine courses at the graduate level, the student will be examined in the following categories: (1) the elected Field of Specialty, as described above; (2) a general knowledge of world literature, including English and American, somewhat more extended than expected of the undergraduate student; and (3) a knowledge of literary theory and techniques of literary study on a level appropriate for the graduate scholar.

Exceptional students may be exempted from taking the examination by petitioning the Graduate Committee, which will review the student's performance and qualifications in arriving at its decision.

Doctor of Philosophy in Comparative Literature

The doctoral program is designed to prepare the student for a professional career as a scholar and critic of literature. Details of the doctoral program in Comparative Literature may be obtained from the Director. Normally the degree requires two years graduate course work (usually a minimum of three graduate courses per quarter). Of these courses, the only required course is CL 220 (Problems in Translation), which is taken twice, with projects in acceptable languages. The rest of the student's work will be in seminars or other graduate-level courses in Comparative Literature, English, the various foreign language departments, or Drama.

In general an exceptional command of foreign languages is required, normally involving a professional competence in two or more foreign languages, either modern or classical. The doctoral student is encouraged to design and carry out a personal plan of study (the "Area of Specialty") in his particular field of interest. The requirements for the doctorate also include an area of competence in literary theory and practical criticism.

Upon completion of his course work, the student will be examined in the following areas of knowledge: (1) mastery of a limited topic in literary theory or history of criticism, along with general knowledge of major critical texts in the history of literature; (2) Area of Specialty as described above; and (3) a general knowledge of the western European literary tradition, including English and American, commensurate with doctoral competence in the field. Following this examination, and upon recommendation of a Candidacy Committee appointed by the Graduate Council, the student is formally admitted to candidacy.

The study toward the degree of Doctor of Philosophy will culminate in the writing of a suitable dissertation, normally on a comparative subject, although subjects lying within a single literature or dealing with general literary and aesthetic problems not confined to any specific literatures may also be acceptable. Studies of the relation between literature and the other arts are also particularly encouraged.

English and Comparative Literature Faculty

Hazard Adams, Ph.D. University of Washington, *Professor of English and Dean of Humanities*

Howard S. Babb, Ph.D. Harvard University, *Professor of English and Chairman of the Department*

Joseph N. Bell, B.A. University of Missouri, *Lecturer in English*

James L. Calderwood, Ph.D. University of Washington, *Associate Professor of English*

Pete E. Clecak, Ph.D. Stanford University, *Assistant Professor of English and Comparative Culture*

Ralph A. Flores, Ph.D. Princeton University, *Assistant Professor of Comparative Literature*

Alexander Gelley, Ph.D. Yale University, *Associate Professor of Comparative Literature and Director of the Comparative Literature Program.*
Jesse Gellrich, Ph.D. State University of New York at Buffalo, *Assistant Professor of English*
Harvey Gross, Ph.D. University of Michigan, *Professor of English*
Oakley Hall, M.F.A. University of Iowa, *Professor of English and Director of the Writing Program*
Carl Hartman, M.F.A. University of Iowa, *Senior Lecturer in English and Assistant Vice Chancellor—Academic Affairs*
Donald Heiney, Ph.D. University of Southern California, *Professor of Comparative Literature*
Renée Riese Hubert, Ph.D. Columbia University, *Professor of Comparative Literature and French*
Murray Krieger, Ph.D. Ohio State University, *Professor of English and Director of the Program in Criticism* (on leave, 1971-72)
Frank Lentricchia, Ph.D. Duke University, *Associate Professor of English*
Jay Martin, Ph.D. Ohio State University, *Professor of English*
James McMichael, Ph.D. Stanford University, *Assistant Professor of English*
Robert L. Montgomery, Ph.D. Harvard University, *Professor of English and Associate Dean of Humanities*
Robert L. Peters, Ph.D. University of Wisconsin, *Professor of English*
Barbara L. Reed, Ph.D. Indiana University, *Assistant Professor of English*
Edgar T. Schell, Ph.D. University of California, Berkeley, *Assistant Professor of English and Vice Chairman of the Department*
Myron Simon, Ed.D. University of Michigan, *Associate Professor of English and Education*
Dickran Tashjian, Ph.D. Brown University, *Assistant Professor of English and Comparative Culture*
Harold Toliver, Ph.D. University of Washington, *Professor of English*
Shirley Van Marter, Ph.D. University of Chicago, *Assistant Professor of English*
Albert O. Wlecke, Ph.D. Michigan State University, *Assistant Professor of English* (on leave fall and winter quarters)
Charles P. Wright, Jr., M.F.A. University of Iowa, *Assistant Professor of English*
Max Wei Yeh, Ph.D. University of Iowa, *Assistant Professor of Comparative Literature*

Undergraduate Courses in English and Comparative Literature

Subject A: A remedial course taken for no credit in the fundamentals of writing. The course includes the writing of papers in addition to drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. (For a description of the Subject A requirements, refer to p. 23).

E 28A-B-C The Nature of Literature (1-1-1)
Required of English majors. The reading of selected texts to explore differences in genres, to initiate a sense of literary history, and to engage the student in the discipline of writing.

WR 30 The Art of Writing: Poetry (1)
Practice in the writing of poems, evaluations of student manuscripts, and parallel readings.

WR 31 The Art of Writing: Prose Fiction (1)
Practice in the writing of prose fiction, evaluation of student manuscripts, and parallel readings.

WR 32 The Art of Writing: Drama (1)
Practice in the writing of drama, evaluation of student manuscripts, and parallel readings.

WR 38 The Art of Writing: Non-Fiction and Journalism (1)
Practice in the writing of non-fiction and news articles, evaluation of student manuscripts, projects.

WR 39 Expository Writing (1)
Work toward developing the ability to write clear and effective prose.

CL 40A-B-C Development of Drama (1-1-1)
Same as Drama 40A-B-C.

CL 50A-B-C The Literary Tradition (1-1-1)
The reading of selected major works in the western literary tradition.

CL 100 Undergraduate Seminar in Literary Theory and Practice (1)
Open to upper-division majors in English and Comparative Literature only. Sections limited to 15 students. Each instructor announces a topic that joins theoretical speculation about literature and the practical criticism of individual literary texts. Topics are announced during the spring quarter preceding the year in which the course is given.

CL 101 Literary Theory and Criticism (1)
Required of majors in English and Comparative Literature. Limited to senior majors. A series of lectures and discussions devoted to the theoretical dimensions of literary criticism as reflected in major theorists from Plato and Aristotle to the present.

E 102 Undergraduate Reading Program in English Literature (1)
Required of English majors, but qualified non-majors may enroll with permission. This course is designed to ground the student in the methods and discipline of independent literary inquiry. He is provided with a detailed syllabus of readings in a particular literary period, genre, author, or mode; a description of the aims and methods of the course; a bibliography of important reference works; a list of specific topics for term papers; and a sample of the examination to be given at the end of the term. At mid-quarter the instructor meets with students for several hours in order to summarize, discuss, and respond to questions about the material under study. A similar meeting will take place at quarter's end. Otherwise, the student is engaged in fully independent study.

CL 102 Undergraduate Reading Program in Comparative Literature (1)
Required of Comparative Literature majors, but others may enroll with permission, as advised. May be taken more than once, provided the topic changes. See E 102 above for course description.

E 103 Undergraduate Lectures in English Literature (1)
Open to all students. May be taken more than once, provided the topic changes. A series of lectures on announced topics in literary criticism, history, genres, modes, major authors.

CL 103 Undergraduate Lectures in Comparative Literature (1)
Open to all students. May be taken more than once, provided the topic changes. A series of lectures on announced topics in literary criticism, history, genres, modes, major authors.

CL 104 The Interdisciplinary Course (1)
Open to all students. May be taken more than once, provided the topic changes. Instructors offering this course will announce interdisciplinary topics of various kinds (e.g. literature and politics, literature and religion, literature and science, literature and the other arts) well in advance of enrollment and will hold discussions as announced.

WR 109 Non-Fiction and Journalism (1)
By consent. The course develops out of WR 38 for students with special competence for and interest in advanced work in Journalism.

WR 110 Short Story Writing (1)
Workshop situation: discussion of student writing and of relevant literary texts. Prerequisite: consent of instructor.

WR 111 Poetry Writing (1)
By consent. Workshop situation: discussion of student writing and of relevant literary texts.

WR 112 Playwriting (1)
By consent. Workshop situation: discussion of student writing and of relevant literary texts.

WR 113 Novel Writing (1)
By consent. Workshop situation: discussion of student writing and of relevant literary texts.

WR 115 Conference in Writing (1)
Majors in writing program; others by consent. May be repeated.

WR 139 Advanced Expository Writing (1)
Primarily for candidates for the teaching certificate. Prerequisite: E 28A-B-C, CL 50A-B-C, Hum. 1A-B-C, or the equivalent.

E 181 The Structure of English (1)

E 184 History of English Language (1)

E 187 Selected Topics in English Linguistics (1)

E 198 Special Topics (1)
Directed group study of selected topics. By consent, by arrangement. May be repeated.

E 199 Reading and Conference (1)
By consent, by arrangement. May be repeated.

CL 198 Special Topics (1)
Directed group study of selected topics. By consent, by arrangement. May be repeated.

CL 199 Reading and Conference (1)
By consent, by arrangement. May be repeated.

Graduate Courses in English and Comparative Literature

All graduate courses may be repeated when the topic varies. The courses are limited to registered graduate students, except that specially qualified fifth-year students seeking a Secondary Teaching Credential may enroll if they have *first* received permission from the Department's Graduate Committee and if space permits.

E 200 Selected Topics in English Linguistics (1)

E 210 Studies in Literary History (1)

CL 210 Comparative Studies (1)

E 220 Studies in Criticism (1)

CL 220 Problems in Translation (1)

E 225 Studies in Literary Genres (1)

E 230 Studies in Major Writers (1)

E 235 Methods of Literary Scholarship (1)

WR 250 Graduate Writers' Workshop (2)
By consent.

WR 251 Writing in Conference (½ to 2)
By consent.

E 290 Reading and Conference (½ to 1½)
By consent.

CL 290 Reading and Conference (½ to 1½)
By consent.

E 291 Guided Reading Course

CL 291 Guided Reading Course

E 299 Dissertation Research

CL 299 Dissertation Research

E 398 The Teaching of English
Restricted to fifth-year students in the Teacher Certification program and to others with consent of Department's Graduate Chairman.

E 399 Seminar in University Teaching (1)
By consent. Ph.D. candidates in English and in Comparative Literature may enroll three times in English 399 before taking the doctorate. Except for teaching assistants, however, no student will enroll in this course during his first year of graduate study. (Students enrolling with an M.A. from another institution may plan to take 399 twice their first year.) Graduate teachers are assigned by the Graduate Committee to teach half-sections of lower-division courses or to serve as interns in upper-division courses. M.F.A. candidates in their second year of study may apply to the Graduate Committee to participate in E 399.

DEPARTMENT OF FRENCH AND ITALIAN

The basic program brings the student to participate in the creative process of language, to conceptualize in French as he learns to understand, speak, read, and write. All classes are taught entirely in French and a multiple approach stresses the interdependence of the four basic skills and makes them mutually reinforcing. The language laboratory is used to complement classroom activity.

Representatives chosen by the undergraduate French majors and by the graduate students serve on departmental committees. These representatives also participate in department meetings and are responsible for student evaluation procedures.

Undergraduate Program

At the intermediate lower-division level, texts of contemporary literary and social interest provide the focus for more advanced conversation, reading, and composition.

After the second year, courses in speaking (conversation and phonetics) and writing enable the student to attain a greater degree of proficiency, preparing him for further study in French literature and linguistics and in French Civilization and Culture.

In the lower-division courses in literature, complete texts are studied by genre: poetry in the fall; theatre in the winter; the novel in the spring. The student learns to analyze and interpret different types of creative literature and is introduced to various critical techniques. At the upper-division level, literature courses may emphasize a single author, a generation, or a genre within an historical period. The content of these courses changes yearly according to the interests of both faculty and students. Senior seminars are offered periodically to discuss literary problems which cannot be dealt with in depth in the regular offerings; among these are Criticism, African Literature in French.

Upper-division courses in Civilization and Culture explore aspects of French history, intellectual thought, and the arts. Courses are offered with an historical emphasis (The World of the Renaissance in France; The Age of Louis XIV) and with a comparative orientation (Poetry and Painting; Fantastic Art and Literature).

Upper-division courses in linguistics introduce students to aspects of the structure of the French language and to the application of linguistic techniques to problems of literary analysis.

Students are placed in elementary and intermediate courses according to their years of previous study and their grades; no placement examination is given. One year of high school is equated with one quarter of work at UCI. A student may not go back more than one quarter and receive credit.

Students are encouraged to participate in programs of study abroad during the junior year.

Requirements for the Bachelor's Degree in French

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

French 10A-B, 12A-B-C, and a) seven upper-division courses of which at least five must be in literature, or b) seven upper-division courses of which at least four must be in Civilization and Culture.

Graduate Programs

The Department stresses understanding far more than encyclopedic knowledge, experimentation with various critical approaches rather than the perpetuation of a tradition, creativity rather than conformity.

Master of Arts in French

The Master of Arts degree is considered to be a step towards the Ph.D. degree; the Master's examination functions as a qualifying exam for the doctoral program. Most candidates take a minimum of eleven graduate courses, with at least six in literature, one in linguistics, and one in writing and style. Particularly well-prepared students may receive special permission to take a minimum of nine courses and to write a short thesis, for which two course credits are given.

Individual programs are arranged in consultation with the graduate advisors. Proficiency in a foreign language other than the major language is required (proficiency is defined as the equivalent of the level attained at the end of course 2C).

All M.A. candidates are required to pass a written and oral examination. The student writes essays where he demonstrates his ability to discuss literary texts—which may or may not have been part of the class program—and to establish relationships between literary works of different periods, genres, or authors.

Doctor of Philosophy in French

Upon the student's successful completion of the qualifying exams for the doctoral program, or his admission to the program with a Master's Degree from an accredited institution, a Guidance Committee is appointed to advise the candidate in his choice of courses and to help him prepare for his comprehensive examinations and his dissertation. The examination committee is composed of five members, one of whom is in another department, in fields closely related to the student's interest and projected area of specialization; one member of the committee will be expected to direct the dissertation.

A. Language Requirements:
A reading knowledge of two foreign languages relevant to the student's area of specialization and subject to the approval of the Department.

B. Course Requirements: A minimum of 18 graduate courses or seminars in French beyond the B.A. including
a) A course in literary criticism.
b) Two graduate courses in French linguistics, one diachronic and the other synchronic, depending on courses taken for the M.A.
c) A minimum of three graduate courses outside the Department in areas related to the field of specialization.

C. Teaching:
Since the overwhelming majority of Ph.D. candidates plan to teach, this Department recognizes its responsibility to train them as teachers. Therefore, as far as it is possible, all candidates without previous teaching experience are required to participate in a program of supervised teaching for at least one year.

D. Comprehensive Examination—Written and Oral:
The written part of the Comprehensive consists of a series of open-book examinations involving clearly defined problems of a critical or historical nature. The student may be given from one to three days to answer any part of the examination. The oral part of the Comprehensive assesses the student's knowledge of French literature and his understanding of a given literary movement. The student will be examined on:
a) five of the following six periods of French literature: Medieval; 16th century; 17th century; 18th century; 19th century; 20th century; or four of these periods plus the development of a single literary genre through all periods of French literature;
b) a given literary movement (e.g. romanticism, baroque, etc.) in a non-French literature.

E. Dissertation:

The dissertation topic chosen by the candidate will normally, but not necessarily, fall within one of the major fields covered by the qualifying examination. The dissertation must be defended in an oral examination and approved by the Doctoral Committee before the candidate is recommended for the degree.

Three faculty members proposed by the Department and appointed by the Graduate Council constitute the Doctoral Committee which directs the preparation and completion of the doctoral thesis. The Doctoral Committee supervises a final examination, the focus of which is the content of the doctoral thesis. The Doctoral Committee certifies that a completed thesis is satisfactory through the signatures of the individual Committee members on the title page of the accepted thesis.

French and Italian Faculty

Richard L. Regosin, Ph.D. The Johns Hopkins University, *Associate Professor of French and Chairman of the Department*

Howard A. Appel, M.A. University of Washington, *Supervisor of Teacher Education—Foreign Languages* (on leave 1970-72)

David Carroll, Ph.D. The Johns Hopkins University, *Assistant Professor of French*

Andrée G. Darling, *Visiting Scholar*

Henri Diament, Ph.D. Columbia University, *Assistant Professor of French and Associate Director, E.A.P., Bordeaux* (1969-71)

Serafina S. Hager, M.A. Columbia University, *Associate in Italian*

Judd D. Hubert, Ph.D. Columbia University, *Professor of French*

Renée Riese Hubert, Ph.D. Columbia University, *Professor of French and Comparative Literature*

Jean-Paul Jannot, A.B.D. University of Michigan, *Acting Assistant Professor of French*

Alice M. Laborde, Ph.D. University of California, Los Angeles, *Associate Professor of French*

Thérèse B. Lynn, Ph.D. University of Illinois, *Assistant Professor of French*

Franco Tonelli, Ph.D. Louisiana State University, *Assistant Professor of French and Italian*

Douglas Walker, A.B.D. University of California, San Diego, *Acting Assistant Professor of French*

Lower-Division Courses in French

1A-B-C Fundamentals of French (1-1-1)
Students are taught to conceptualize in French as they learn to understand, read, write, and speak. Classes are conducted entirely in French and meet daily. Language laboratory attendance is required.

2A-B-C Intermediate French (1-1-1)
Texts of contemporary literary or social interest provide the focus for more advanced conversation, reading, and composition. Classes are conducted entirely in French. Prerequisite: normally three years of high school French or one year of college French.

10A-B Composition and Creative Writing (1-1)
Systematic review of grammar with written compositions on themes from readings chosen to introduce the student to aspects of literary analysis—prose and poetry. Prerequisite: completion of French 2C or equivalent.

11 French Phonetics (1)

12A Introduction to Poetry (1)

12B Introduction to Theatre (1)

12C Introduction to Novel (1)
In this series of courses (12A-B-C) students learn to analyze and interpret creative literature by genre and are introduced to various critical techniques.

13 Conversation (1)

Upper-Division Courses in French

The prerequisite for all upper-division literature courses is French 12A-B-C or the equivalent. The content of all upper-division literature courses—which may emphasize a single author, a generation, or a genre within an historical period—changes yearly. Students should consult the offerings in linguistics under the Program in Linguistics.

105 Advanced Composition and Style (1)

110A-B-C French Civilization (1-1-1)

112A-B-C French Culture (1-1-1)

116A-B-C Readings in Sixteenth-Century French Literature (1-1-1)

117A-B-C Readings in Seventeenth-Century French Literature (1-1-1)

118A-B-C Readings in Eighteenth-Century French Literature (1-1-1)

119A-B-C Readings in Nineteenth-Century French Literature (1-1-1)

120A-B-C Readings in Twentieth-Century French Literature (1-1-1)

130 Junior-Senior Seminar in French Literature (1)
May be repeated. Prerequisites: two upper-division literature courses.

131 Senior Seminar in Linguistics (1)
May be repeated. Prerequisite: Linguistics 50 or consent of instructor.

140A-B-C Readings in French Literary Genre (1-1-1)

150A-B-C French Literature in Translation (1-1-1)

199 Special Studies in French (1)
May be repeated.

Graduate Courses in French

The content of these courses changes yearly. Students should also consult the offerings of the Program in Linguistics.

200 Selected Topics in French Linguistics (1)
May be repeated.

201 History of the French Language (1)
Prerequisite: Fundamentals of Latin.

202 Contrastive French Phonology (1)

203 Contrastive French Morphology and Syntax (1)

208 Stylistics (1)

210A-B-C Studies in Medieval Literature (1-1-1)

216A-B-C Studies in Renaissance Literature (1-1-1)

217A-B-C Studies in Baroque and Classical Literature (1-1-1)

218A-B-C Studies in Eighteenth-Century Literature (1-1-1)

219A-B-C Studies in Romanticism and Symbolism (1-1-1)

219D-E Studies in Naturalism and Realism (1-1)

220A-B-C Contemporary Novel (1-1-1)
221A-B-C Contemporary Poetry (1-1-1)
222A-B Contemporary Theater (1-1)
230 Studies in Dramatic Literature (1)
May be repeated.
231 Studies in Fiction (1)
May be repeated.
232 Studies in Non-Fictional Prose (1)
May be repeated.
233 Studies in Poetry and Poetics (1)
May be repeated.
240 Studies on a Major Writer (1)
May be repeated.
260A-B Literary Criticism (1-1)
270 Writing and Style (1)
290 Research in French Language and Literature (1)
May be repeated.
299 Dissertation Research

Lower-Division Courses in Italian

1A-B-C Fundamentals of Italian (1-1-1)
Students are taught to conceptualize in Italian as they learn to understand, read, write, and speak. Classes are conducted entirely in Italian and meet daily. Language laboratory attendance is required.

2A-B-C Intermediate Italian (1-1-1)
Texts of contemporary literary or social interest provide the focus for more advanced conversation, reading, and composition. Classes are conducted entirely in Italian. Prerequisites: normally three years of high school Italian or one year of college Italian.

DEPARTMENT OF GERMAN AND RUSSIAN

German Undergraduate Program

Since Western Culture is largely determined by the interaction of various peoples who express themselves in different languages, we can understand ourselves and our social setting only if we transport ourselves out of our habitual linguistic and cultural environment. The study of a language closely related to but sufficiently different from English, such as German, and the study of the social development of German-speaking peoples provide a view of our world which will transcend parochialism. Accordingly, the German section of the Department offers a program for majors based on courses in which the emphasis will be on the study of German language and literature in their social and political setting.

All courses in the Department are taught in German to an extent compatible with the aim of the course. In the basic courses the student will develop an understanding of the nature of the language, based on linguistic principles,

while learning the necessary skills. Use will be made of the language laboratory. At the end of the first year, students will have attained mastery of the basic structure of the language.

At the intermediate and advanced levels the student's ability to read and write German will be gradually developed. A third-year course of two quarters will stress composition as opposed to translation. It will be preceded by a course in phonetics which will aim to perfect pronunciation as well as to introduce historical and dialectical variants. The introductory course in literature, also in the third year, will familiarize the student with German terminology used in the interpretation of literature. It is assumed that the student is familiar with basic concepts of literature in English..

Students are encouraged to participate in programs of study abroad during the summer and the junior year in Göttingen.

Students entering UCI with previous German training will be given advanced standing as follows. In general, one year of high school work is equated with one quarter of UCI work. Thus students with one, two, three, and four years of high school German will enroll in German 1B, 1C, 2A, and 2B respectively. Exceptions to this placement procedure must have the approval of the director of first- and second-year German instruction.

The Department also administers the self-instructional course in Swedish.

Requirements for the Bachelor's Degree in German

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

German 100A-B-C, 101, 102A-B; six courses from German 110-199.

German Graduate Program

Master of Arts in German

Before entering the program, a candidate is expected to have the equivalent of our undergraduate major. The minimum course requirement for the M.A. degree is three quarters of residency in which the student is engaged full-time in his studies and maintains good academic standing. At an appropriate time during this residency the candidate must present himself for the departmental Methods Examination. The Methods Examination requires: (1) Familiarity with basic concepts of linguistics and German philology and ability to use them in the analysis of texts. This requirement may be met by successful completion of German 201 (Introduction to Middle High German). (2) An essay on a text chosen from a variety of selections (two-three hours). (3) An oral examination based on a selection of literary works made by the student himself. In this presentation the student is expected to show his grasp of literary methodology and aesthetic evaluation. Proficiency in a foreign language (defined as the equivalent of the level attained at the end of 2C) other than German is further required for the M.A. degree.

German Faculty

Richard Regosin, Ph.D. Johns Hopkins University, *Acting Chairman and Associate Professor of French*
Theodore Fiedler, Ph.D. Washington University, *Assistant Professor of German*
Herbert Lehnert, Ph.D. University of Kiel, *Professor of German*
Bert Nagel, Ph.D. University of Heidelberg, *Professor of German*
Paul R. Schimmelpfennig, Ph.D. Princeton University, *Assistant Professor of German*
Alan Shaterian, Ph.D. University of California, Berkeley, *Assistant Professor of German*
Malve Slocum, Ph.D. Cornell University, *Lecturer in German*

Lower-Division Courses in German

It is recommended that students also take Linguistics 50 and other courses listed under the Program in Linguistics.

1A-B-C Fundamentals of German (1-1-1)
This introductory course aims at a more creative and stimulating approach to language learning. The student is brought far beyond the intellectually limited confines of the mimicry-memorization method and acquainted with basic concepts in linguistics in order that he may apply his knowledge of the principles underlying all language to the challenging experience of learning German.
The faculty member in charge will hold two lectures weekly for all students of German 1. Occasional guest lecturers will speak on subjects pertinent to the study of German language and literature. There are, in addition, two intensive drill sessions and one supervised language laboratory session per week.

2A-B-C German Reading and Composition (1-1-1)
Lecture, together with large and small group discussions. Introduction to contemporary German literature. Linguistic and cultural comparisons between German and English speaking nations. One section of 2C will be devoted to Scientific German. Prerequisites: Normally three years of high school German or one year of college German.

Upper-Division Courses in German

100A Contrastive Phonetics of German and English (1)
Practical work in the contrastive phonetics of German and English as well as study German orthography. Prerequisite: German 2C.

100B-C Advanced Composition (1-1)
The aim of these courses is to help the student develop competence in writing clear expository German. Prerequisite: German 2C.

101 Introduction to Literature (1)
Reading and discussion of representative examples of recent German drama, prose, and poetry in order to familiarize students with the terminology of German literary criticism. Prerequisite: German 2C.

102A Literature and Society Since World War II (1)

102B Literature and Society 1918-1945 (1)
Interdisciplinary courses introducing students to recent German literature not only as an aesthetic phenomenon but also as a social and political force. Methodological problems arising from an analysis of literature in its historical context will receive special consideration.

110 Advanced Composition and Stylistics (1)
Besides providing the student an opportunity to gain further competence in writing effective German prose, the course will also introduce him to the study of stylistics. Readings may range from literature and journalism to the social sciences. Prerequisite: German 100C or equivalent.

Courses numbered 117 to 199 may be repeated provided course content changes. Prerequisite for these courses: German 101 or equivalent.

117 Topics in German Literature 750-1750 (1)
Specific course content will be determined by individual faculty members. Example: Literary and Polemical Writing of the Reformation.

118 Studies in the Age of Goethe (1)
Course may deal with individual authors such as Lessing, Goethe, Schiller, Kleist and Hölderlin or the drama of the "angry young men" of the German 1770's.

119 Studies in Nineteenth-Century German Literature (1)
Course may deal with individual authors such as Büchner, Grillparzer, Keller, and Nietzsche or study broader social-literary phenomena such as the Viennese Folk Theatre.

120 Studies in Twentieth-Century German Literature (1)
Course may deal with individual authors such as Thomas Mann, Brecht, Kafka, Rilke, Grass or address questions of genre such as the drama of German Expressionism.

150A-B-C German Literature in Translation (1-1-1)
Reading of major German literary works 1750 to the present in translation.

180 Structure and History of the German Language

199 Special Studies in German (1)

Graduate Courses in German

Graduate courses in German are divided into three categories. *Introductory Courses*, primarily designed for first-year graduate students, are oriented predominantly to the study of critical methods. *Topical Courses*, not limited to strictly literary subjects, will treat such topics in the cultural history of German-speaking areas as the interrelationship of literature and society in the Weimar Republic and the rise of aestheticism during the age of Goethe. No attempt will be made in these courses to cover exhaustively a particular period in German literary or cultural history. Instead, they will afford in-depth studies of a subject within a period or across period lines. *Seminar Courses* will be preserved specifically for the presentation of new views on a given subject. The same freedom of specific content as explained in the description of Topical Courses applies here. This structuring of graduate courses is to serve as the basis of a proposed Ph.D. program organized on the principle of interdisciplinary studies and the treatment of literature both as an aesthetic phenomenon and a cultural force. For this reason the Department of German and Russian strongly encourages graduate students to enroll in courses given by the English and Comparative Literature Department, the History Department, the Philosophy Department, and other foreign language departments in the School of Humanities.

Introductory Courses

201 History of the German Language (1)

204 Survey of Germanic Languages (1)

205 Introduction to Middle High German (1)
210A Methods of Literary Study: Tools of Scholarship; Interpretation of Poetry (1)
210B Methods of Literary Study: Interpretation of Narrative Prose and Drama (1)
210C Methods of Literary Study: Literary Theory and the History of Criticism (1)

Topical Courses

May be repeated, provided course content changes.
200 Selected Topics in Germanic Linguistics (1)
202 Contrastive German Phonology (1)
203 Contrastive German Morphology and Syntax (1)
215 Studies in the Literature of the Middle Ages (1)
216 Studies in the Literature of the Renaissance, Reformation, and Baroque (1)
217 Studies in the Eighteenth Century (1)
218 Studies in the Age of Goethe (1)
219 Studies in the Nineteenth Century (1)
220 Studies in the Twentieth Century (1)

Seminar Courses

May be repeated, provided course content changes.
291 Research in German Language and Literature
This course may be used for independent study as well as for a special seminar.
296 Seminar in Medieval Literature (1)
297 Seminar in Literature from 1500-1750 (1)
298 Seminar in Literature from 1750 to the Present (1)
299 Dissertation (1)
399 Teaching of German (1)

Russian Undergraduate Program

Russian is a language spoken by 220 million people in the Soviet Union and ranks with English and Chinese as one of the three major world languages. Russian is a language of the Indo-European family and is thus related to English, French, and German. Russian is difficult, but not in the way so many potential students envisage. It is an infinitely rich language, as is English, and adapts itself well to a variety of styles and genres from lyric love poetry to the seeming harshness and brashness of the futurists.

For the first two years the Russian program at UCI emphasizes a reading knowledge of literary Russian. In the latter part of the second year, and thereafter, the speaking and writing skills are emphasized. At the end of his senior year, the student can expect to have attained a rather high level of proficiency in all language skills—reading, writing, speaking, and understanding. By then he will have read a number of selected literary texts —including a fair portion of the significant masterworks—in the original. He will also have familiarized himself with some of the historical background of the language and with its relation to other Slavic and European languages. And he will have achieved a reasonable degree of familiarity with the major cultural and social trends in Russian history.

Requirements for the Bachelor's Degree in Russian

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

The Russian major consists of the following 12 courses: Russian 10A-B; 11; 101A-B; 101C; 151A-B-C; 160A-B; 170. In addition, it is strongly recommended that the student take or audit Linguistics 50, and Russian 150A-B-C, 180, 181, and 20A-B.

Russian Faculty

Guy de Mallac-Sauzier, Ph.D. Cornell University, *Associate Professor of Russian and Head, Russian Section*

Jared Gordon, Ph.D. University of California, Los Angeles, *Assistant Professor of Russian*

Rainer Vadim Grenewitz, M.A. Cornell University, *Lecturer in Russian*

Ethelbert C. Barksdale, Ph.D. Ohio State University, *Lecturer in Russian*

Lower-Division Courses in Russian

1A-B-C Fundamentals of the Russian Language
The course focuses on reading ability. In the third quarter the student will be reading contemporary Soviet prose (such as literary texts and newspapers) with the aid of a dictionary.

2A-B-C Second-year Language Study
The student can expect to read contemporary Russian literary and political documents. The emphasis will be on reading ability, but the student can expect a greater stress on oral skills than in the first year.

10A-B Third-year Language Study
A continuation of the second-year program, with added emphasis on oral skills.

11 Phonetics and Review Grammar
A linguistic introduction to the sounds and intonation of Russian. The grammar will concentrate only on some of the more difficult points. Linguistics 50 is a strongly recommended precursor to this course.

20A-B Russian Civilization
A two-quarter sequence devoted to the definition of Russian culture from the medieval to the modern period, with attention to historical, literary, political, and philosophical interpretations.

Upper-Division Courses in Russian

101A-B Fourth-year Language Study
Original literature is read, and conversation and composition are in Russian.

101C The History and Development of the Russian Literary Language
A brief philological introduction. Nineteenth- and twentieth-century prose works will be read and analysed from the stylistic viewpoint.

150A-B-C Russian Literature in Translation
The first quarter of this sequence is devoted to nineteenth-century, and the second to twentieth-century prose works. The topic varies in the 150C course; topic for 1971-72: Russian Intellectual Thought.

151A Russian Prose 1800-1865 (in Russian)

151B Russian Prose 1865-1910 (in Russian)

151C Russian and Soviet Prose 1910-present (in Russian)

155 Russian Stage and Film Drama (1)

160A Russian Poetry of the Golden Age (in Russian)

160B Russian Poetry 1880-present (in Russian)

170 *Russian Literary Criticism*
Open to qualified students. Russian majors are expected to do a significant portion of the reading in the original.

180 Tolstoy in Translation
The major novels and selected short stories, essays, and autobiographical writings will be discussed.

181 Dostoevsky in Translation
Topic varies; may be repeated for credit.

199 Special Studies

DEPARTMENT OF HISTORY

Undergraduate Program

The History faculty views its obligations in teaching undergraduates as twofold: (1) the transmission of knowledge and (2) the development of values associated with a liberal education. The first goal can be attained in three related ways:

a) Helping the student to acquire a reasonable competence in one fairly broad field of history—focusing upon the more significant events, movements, and institutions, including the role of individuals, forces, and factors, and the whys and wherefores.
b) Showing, by way of problems and methods, how historians have worked and are working, including some knowledge of the relationships of History to its sister disciplines which inevitably affect the whole nature of History.
c) Imparting a first-hand acquaintance with the evidence and stressing mastery of at least one period or aspect of a student's primary field of interest, so that, as a concomitant, he may acquire some appreciation of the pleasure and excitement of intellectual inquiry.

Our other goal, a liberal education, is intended to open the mind, and to stretch it, not merely to stock it with knowledge. A liberal education should train the student to think—seeking objectivity and intellectual independence; detecting false arguments and bad evidence; constructing a coherent case; seeing more than one side of an issue and deciding which is better or best; making words perform their task with clarity and precision; distinguishing between the important and the unimportant, the relevant and the irrelevant. These are among the more important values which the study of History should help to develop.

The Department regularly offers two general courses to lower-division students, with one three-course sequence required for majors. Currently, the

Department is offering 29A-B-C, "The Formation of Modern Society," and 30A-B-C, "Western Traditions."

As upper-division students, majors are required to take a minimum of six upper-division courses (excluding historiography courses and the Senior Seminar, and possibly including one course in "Independent Study"), of which at least three courses must be related to the area in which the student will select his Senior Seminar. The required course in historiography should preferably be elected in the junior year. The two-quarter Senior Seminar is the culminating experience for our majors. Students who have graduate work in view are urged to have a reading knowledge of a modern European language by their senior year and to seek to use it in the seminar.

A Summary Statement of the Undergraduate Major

3 One three-quarter lower-division sequence
6 Upper-division courses (may include one "Independent Study")
2 One two-quarter Senior Seminar
1 Historiography course
12 Courses

Like the lower-division core courses, upper-division courses in History are open to students majoring in other fields, though in more advanced courses consent of the instructor may be required. Students who have questions concerning History courses or the History major are encouraged to call upon the departmental office or their advisors for assistance.

The History Department seeks to work closely with its students. Three student representatives, one undergraduate, one graduate, and one teaching assistant (elected by their respective constituencies), sit regularly with the faculty at its department meetings and serve on major departmental committees. Students also play an important role in the evaluation of teaching by the faculty and the teaching assistants.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements

History 29A-B-C or 30A-B-C or, for upper-division transfer students, a year-long survey in history; seven additional upper-division courses, including one in historiography; History 190A-B (Senior Seminar).

Graduate Program

At Irvine we are supplementing the traditional concerns of graduate work in History with several new kinds of emphasis, including those upon

1. mastering the historiographical and philosophical bases of the subject;
2. exploring the comparative and topical approaches to analysis;
3. exploiting the techniques and insights developed by neighboring disciplines; and
4. developing the ability to teach effectively on the university level.

The objective of the program is to provide future historians with the skills, concepts, and perspectives they will need to understand and explain the significance of the past in a world that is changing more and more rapidly. It is our conviction that historians must combine their long-continuing interest in narrative studies with a greater concern for precision in method, relevant generalization, and effective communication if they are to succeed in playing a constructive role.

Master of Arts in History

1.Requirements for Admission

An applicant for admission to the Master of Arts Program in History should have a Bachelor's Degree with the equivalent of an undergraduate major in History. Nonetheless, the Department also welcomes students who have previously specialized in other subject areas and who show promise of sustained and self-disciplined work in History. Note: *Admission to the M.A. program does not automatically certify acceptance for later work on the doctoral level.* Admission to the Ph.D. program is a separate decision made on the basis of performance during the M.A. year.

Typically, a minimum undergraduate grade point average of 3.0 (B) is required for admission, with evidence of better work in History. In addition, all applicants are asked to submit three letters of recommendation, aptitude and achievement scores from the Graduate Record Examination, and examples of written work in History from their undergraduate classes. Students living in Southern California must arrange to come to Irvine for an interview with the Chairman of the Department or the Coordinator of Graduate Advising.

2.Language Requirements

Except in the cases outlined below, a reading knowledge of one useful foreign language is required for the Master of Arts degree. The student must demonstrate his language proficiency either by passing a departmental examination or by achieving a score of at least 500 on the appropriate ETS (Educational Testing Service) examination. He may not enroll in a seminar in European History until he has met the language requirement.

An individual in American or British History, *with his advisor's permission*, may choose to substitute a coherent sequence of courses in communications science, statistics, or comparable studies for his Master's language. If he wishes to count courses which he has taken elsewhere in fulfillment of this requirement, he may be asked to pass special examinations in the subjects specified.

3.Program of Study

After consulting with the Coordinator of Graduate Advising, the student will work out his program with an assigned departmental advisor. If he is intending to proceed to the Ph.D., he should begin at this time to delineate his later studies in order that he may fit his work for the M.A. more usefully into his total program. It is desirable, usually, for such a student to select a field for the M.A. which is closely related by area, period, or topic to his probable major field for the Ph.D.

At the present time the Department offers work in three areas for students in the Master's year: America (United States) since 1600, Britain since 1500, and Europe since 1700.

Nine courses are required for the degree: two in historiography (History 200A-B); two in a research seminar (taken in sequence, as a unit); three in a colloquium (taken in sequence, as a unit); and two in electives (from such courses as History 280, History 285, or History 299). The student will be expected to take his seminar and colloquium within the same general field, i.e. within American, British, or European History. In most cases he will have completed his seminar and historiography as well as two-thirds of his colloquium requirement by the end of his second quarter as a graduate student.

4.**Time Limits**

The Department encourages M.A. students to elect a full-time program, or three courses per quarter. Part-time students and teaching assistants may have a maximum of six academic quarters to satisfy their requirements, but they are urged to proceed as rapidly as possible.

Doctor of Philosophy in History

1.**Requirements for Admission**

To apply for admission to the doctoral program, the student should have completed the M.A. in History at Irvine or equivalent work at another institution. Whenever possible, however, it would be advisable for the potential doctoral student to begin his graduate work on this campus, since the doctoral student who has taken his M.A. elsewhere will be expected during his first year to enroll in a program identical to that of the incoming M.A. students. Applicants who have not previously done so must take the Graduate Record Examination in *both* the Aptitude and Advanced History sections. The results of this test, together with the student's record, letters, and *interview where possible,* will be used in deciding for or against his application for admission.

2.**Language Requirements**

All students, except as specified below, must demonstrate a reading knowledge of one useful foreign language no later than the end of the first year in the program. Normally, the student will count his Master's language in fulfillment of this stipulation, but his proficiency can also be established by his passing a departmental test or by achieving a score of at least 500 on the appropriate ETS examination. (Note: Scores from examinations taken more than two years prior to admission to the doctoral program will *not* be accepted as satisfying this requirement.) Students in American or British history who have opted for a language substitute in completing the UCI Master's Degree will be allowed to submit this work in fulfillment of "further 'special skill' requirements" (see paragraph 3, below) and will not be subject to the one-year time limit for achieving a foreign language competence.

3.**Further "Special Skill" Requirements**

These depend upon the field of emphasis which the student selects:

a. An individual with a major field in United States or British History may *either* demonstrate a reading knowledge of a second useful foreign language (by

achieving an ETS score of 500 or by passing a language test designed by his advisor), *or, with his advisor's permission,* complete, as a doctoral student, a coherent sequence of courses in an area of study (e.g., communications science, computer work, statistics, linguistic analysis) that will provide tools useful in mastering his major field. These courses would be taken in addition to those described in paragraph 4, below, and should not lie within the student's major, minor, or outside fields. Any student who wishes to count courses which he has taken previous to his UCI graduate work in fulfillment of this requirement may be asked to pass a special examination on the methods in question.

b. An individual with a major field in a non-American or non-British area must demonstrate a reading knowledge of a second useful foreign language. He can do this either by achieving an ETS score of 500 or by passing a language test arranged by his advisor.

4. Program of Study

After consulting with the Coordinator of Graduate Advising, the student will be assigned a departmental advisor who will be responsible for approving his fields of study, helping him to select consulting faculty, and, after the student has passed his qualifying examinations, recommending the director of his dissertation.

The student will prepare himself for qualifying examinations in four fields: a major, a related minor, a second minor—all in History—, and one aspect of a discipline outside of History which is related to his major field.

a. The major and minor fields will be either defined topically or chosen from among the historical periods regularly offered (various combinations of themes and periods may be worked out). In devising topical fields (e.g. history of democratic institutions, war in the modern world, comparative industrialization, comparative reform movements), a student must obtain the consent of both his advisor and the Coordinator of Graduate Advising. In planning such a program, the student should make certain that instructors are available and that an adequate concern for historical continuity is built into the design.

b. Four historical periods are currently offered as major fields by the Department: Europe since 1815; Great Britain, 1485-1714; Great Britain since 1714, and America since 1840.

c. Comparable periods will be offered as minor fields in Ancient, Medieval, and early Modern European History, as well as in Colonial American and Latin American History.

Course requirements for doctoral students include the following:

a. One two-quarter sequence in *Historiography* (normally taken during the first and second quarters of the first doctoral year). Students with a Master's degree from UCI are exempted from this requirement.

b. One two-quarter *seminar* in the major field (normally taken during the first and second quarters of the first doctoral year). Students with a Master's degree from UCI are exempted from this requirement.

c. Two three-quarter (i.e. year-long) *colloquium* sequences, the first of which will encompass the student's major field and the second of which will encom-

pass one of his minor fields. Normally, the first would be taken during the first doctoral year and the second during the second doctoral year. Students with an M.A. from UCI are exempted from the first of these two sequences.

The remainder of the student's program during each quarter of his residence will consist of those colloquia, seminars, and courses in Special Topics (History 280), Special Methods (History 285), or Directed Reading (History 299) with which he chooses to prepare himself for his examinations and with which he can attain the normal academic load of three courses per quarter. (For a teaching assistant or other student who is devoting at least half-time to teaching, five courses per academic year is the normal load.) It should be noted that the University residence requirement for the Ph.D. is six quarters, and that this is usually fulfilled during the first two years that a student is in the program. University regulations stipulate that a student must be registered during fall, winter, and spring quarters unless he has petitioned for and been granted a leave of absence.

5. Teaching Requirements

All doctoral students are expected to do at least some teaching under the direction of the regular faculty, either as teaching assistants or as temporary associates. Associateships can be arranged for by the student's advisor and will typically involve a limited experience in lecturing, discussion-group leadership, preparation of examinations, and the planning of a course. Upon the student's completion of this work, the advisor will prepare a statement of evaluation which will be entered in the student's dossier. Teaching assistants will be evaluated both by the professors and the undergraduates of the courses in which they teach, and the evaluations will be placed among their departmental records.

6. The Qualifying Examinations and Dissertation

After completing the appropriate courses and other preparatory work (normally seven to eight quarters after beginning the M.A. at Irvine or six to seven quarters after joining the Ph.D. program from the outside), the student will present himself for written examinations in his major and minor fields and, following this, for a qualifying oral examination covering his entire program (with previously determined emphases) except for the omission of his second minor. After passing the written and oral examinations, the student will be advanced to candidacy for the Ph.D. and will work upon his dissertation. The research and writing involved in this effort can be expected to require from one to two years. There will be a final oral examination on the dissertation before it is accepted by the Department.

History Faculty

Gerald T. White, Ph.D. University of California, Berkeley, *Professor of History and Chairman of the Department*

Kendall Bailes, Ph.D. Columbia University, *Assistant Professor of History*

Kenneth P. Bailey, Ph.D. University of California, Los Angeles, *Lecturer in History and Director of Teacher Education*

John P. Diggins, Ph.D. University of Southern California, *Associate Professor of History*

James J. Flink, Ph.D. University of Pennsylvania, *Associate Professor of History and Comparative Culture*
Richard I. Frank, Ph.D. University of California, Berkeley, *Associate Professor of History and Classics*
Lamar Mott Hill, Ph.D. University of London, *Assistant Professor of History*
Karl G. Hufbauer, Ph.D. University of California, Berkeley, *Assistant Professor of History*
Jon S. Jacobson, Ph.D. University of California, Berkeley, *Assistant Professor of History*
Michael P. Johnson, M.A. Stanford University, *Lecturer in History*
Robert H. Lucas, Ph.D. Columbia University, *Assistant Professor of History*
Arthur J. Marder, Ph.D. Harvard University, *Professor of History*
Samuel C. McCulloch, Ph.D. University of California, Los Angeles, *Professor of History*
Henry Cord Meyer, Ph.D. Yale University, *Professor of History*
Keith L. Nelson, Ph.D. University of California, Berkeley, *Assistant Professor of History*
Spencer C. Olin, Jr., Ph.D. Claremont Graduate School, *Associate Professor of History*
Mark S. Poster, Ph.D. New York University, *Assistant Professor of History*
J. Alan Rogers, Ph.D. University of California, Santa Barbara, *Assistant Professor of History*
Ronald G. Woodbury, Ph.D. Columbia University, *Assistant Professor of History*

Lower-Division Courses in History

29A-B-C The Formation of Modern Society (1-1-1)
Presents a unified view of the histories of Europe, the United States, and Latin America focusing on the general social transformation from traditional to modern society. Stress will be placed on comparative structural analysis with the intent that the students acquire an understanding of how advanced industrial society has evolved. Special reference will be given to significant problems of historical interpretation.

30A-B-C Western Traditions (1-1-1)
From the Ancient Near East to the present day. The thrust throughout will be on the great Western Traditions, centering about the words "democracy," "freedom," "law," and "humanism," and including the Western cultural heritage.

Upper-Division Courses in History

100 History and Historians: The Western Tradition (1)
Studies in historical discipline and interpretation, varying in emphasis from specific individuals to the work of entire eras.

101 History as Art and Science (1)
An overview of the varieties of historical awareness, from humanistic to scientific emphases, studied in depth within an integrated subject and period or in a sequence of topics.

102 Classical Historians and Historiography (1)
Same as Classics 141. The development of historiography from its ethnographic and epic origins to its form as a major literary genre. All readings are in English.

110A-B Hellenic and Hellenistic Greece (1-1)
Homeric backgrounds and the rise of the Polis. Athenian and Spartan cultures. The post-Alexandrian empires of the Near East. Hellenistic civilization.

112A-B The Roman Empire (1-1)
The Empire as unifier of the Mediterranean World, its strengths and weaknesses as a social and political system, the significance of Christianity, and the conquest of classical civilization by the Church and the barbarians.

115 Early Medieval Europe, 300-1000 (1)
The rise of Christian culture and impact of barbarian invasions. The empires of Constantine, Justinian, and Charlemagne, interaction of Byzantine East and Latin West.

116 The High Middle Ages, 1000-1300 (1)
Norse invasions of Europe. Rise of towns and universities. Conflicts of church and state. Revival of science and philosophy. Courtly love. Emergence of nation-states.

118 Aspects of Medieval Britain (1)
Covers the British Isles from their pre-history to 1485. The rise of monarchial institutions during Saxon, Norman, and Angevin rule will provide a central background for a study of the culture and intellectual history of the period.

119 Problems in Medieval History (1)
Topics chosen for investigation will reflect the students' individual interests and will be approached tutorially. Emphasis will be directed toward the improvement of research techniques as utilized in the composition of a substantial term paper. A prerequisite for admission will be either History 115 and/or History 116 or the equivalent.

125 The Renaissance (1)
A study, against respective political backgrounds, of the cultural and intellectual activity of Italy from the time of Dante to that of Michelangelo, of France from the Babylonian Captivity to the reign of Francis I, and of Germany and the Low countries from Wessel Gansfort to von Hutten and Reuchlin. Emphasis will fall on the most brilliant of these, the Italian.

126 The Reformation and the Counter-Reformation (1)
An examination of several political, social, economic, and theological aspects of the Reformation and the Counter-Reformation. The two centuries which will be covered in the course will be considered both as a critical period in themselves and as a bridge between the humanism of the early Renaissance and the rationalism which emerged at the end of the seventeenth and the early eighteenth centuries.

130A Europe in the Nineteenth Century (1)
The industrial revolution, mob violence and political insurrection, realism in culture and politics, the modernization of backward states, classical liberalism and its decline, the urge to imperialism, Marxian socialism, and anti-Semitism.

130B Europe in the Twentieth Century (1)
The interaction of domestic and international affairs, with an indication of major cultural trends, in Europe from about 1890 to 1945.

130C Europe Since 1939: World War, Cold War, and After (1)
A historical survey of European politics, diplomacy, economy, and culture during recent times.

131A-B-C European Intellectual History from the Enlightenment to the Twentieth Century (1-1-1)
The main currents of Western thought with emphasis on the moral and social ideas of English, French, and German thinkers. Dominant world views of the period will be studied in their historical context and from perspectives of the sociology and psychology of ideas.

132 Marxism and Existentialism (1)
Analysis of two great intellectual movements of Europe in the 19th and 20th centuries which focuses on the recent attempts at synthesizing the two philosophies into a coherent world view. Emphasis will be placed on readings in Marx, Nietzsche, Sartre, and the Socialist Humanists.

135A-B European International Relations, 1848-Present (1)
The cultural, economic, and political relations of European states from the eve of the revolutions of 1848 to the eve of the Second World War.

136A-B-C The History of Russia (1-1-1)
The course runs from the 9th century to the present and emphasizes social and political developments. The first quarter covers the evolution of Russia through the Decembrist Revolution of 1825; the second quarter the transformation of Russia from feudal-agricultural to an agricultural-industrial state, ending with the Revolution of 1917; and the third quarter is concerned with the Soviet period.

137 The History of Modern Central-East Europe (1)
This course deals with the history of Austria, Hungary, Czechoslovakia, and Poland from 1918 to the present. It emphasizes, especially, social and political factors.

138 Aspects of German-Slavic Relations Since 1815 (1)
Social, intellectual, and political interrelationships between Germans and Slavs. Influences, cooperation, and confrontation from the age of Romanticism to the era of Fascism.

139A-B German History (1-1)
A historical analysis of German politics, diplomacy, and culture from Bismarck to Brandt.

140A-B-C British Traditions and Institutions (1-1-1)
The men and events, literary and artistic works, ideals and institutions which best reveal or most deeply influenced British life.

143 Humanism and Early Tudor Politics (1)
An examination of the two major humanistic influences in England, civic and spiritual, and their impact on the issues of reformation, diplomacy, political favor, and literature in England from 1485 until the death of Edward VI in 1553. In a sense these two influences were exemplified in the persons of Thomas More and Thomas Cromwell and it will be to their works that frequent reference is made.

144 Parliament and Society: 1558-1640 (1)
An examination of the growth of an independent parliamentary institution, its impact upon and its reflection of contemporary society, and an inquiry into possible causal factors of the Civil War as revealed in parliaments from the accession of Elizabeth to the summoning of the first session of the Long Parliament.

146A-B Constitutional and Legal History of England (1-1)
English national governmental systems with emphasis on parliamentary processes, philosophy of Anglo-Saxon law, and administrative institutions.

149A-B The British Commonwealth and Empire (1-1)
Emphasis upon social, intellectual, and cultural development. The impact of English history upon the evolution of self-governing units. Significance of the Empire in the contemporary world.

150 The Mexican (1)
A social and cultural history of the Mexican from pre-Columbian civilizations through the confrontation of Indian and European cultures, the wars for Independence, and the Revolution of 1910 to questions of cultural identity and discrimination north and south of the Rio Grande today.

151 The United States and Latin America (1)
A history of economic, military, and diplomatic interactions between the United States and Latin America from the 18th to the 20th centuries with emphasis on conflicts

related to the divergent demands of social and economic structures in different stages of modernization.

152 Revolutionary Latin America (1)
An examination of the social and economic structure of Latin America in the 20th century with emphasis on the question of how Latin America can deal effectively with its monumental problems of inequality, exploitation, and conflict.

166A Colonial America (1)
The growth and development of America from the founding of the colonies through the Revolution, stressing the formation of distinctive American institutions, social and economic patterns, and intellectual attitudes.

166B Revolutionary America, 1763-1800 (1)
An analysis of the founding of a new nation: the causes of the breakup of the first British Empire, the Revolutionary struggle, the formation of new government, and the rise of political parties.

168A American Communities (1)
Same as American and Comparative Culture 102A. A study of the American community from both historic and cross-cultural perspectives. Emphasis is upon the historical development of various forms of community life in American civilization and upon comparison of these forms of community life with one another and with selected forms of community life found in other cultures.

168B American Communities (1)
Same as American and Comparative Culture 102B. An interdisciplinary examination of American community culture and American attitudes toward community in the twentieth century. Prerequisite: History 168A.

169 The United States in Transition, 1860-1901 (1)
From the Civil War to Progressivism, with special emphasis on political and social change, industrial growth, the rise of organized labor, and the principal movements for social reform.

170A-B The Limits of Reform in Modern America (1-1)
An examination of the rise of corporate liberalism as a political ideology, and a critical examination of the degree of change achieved by the major reform movements of the twentieth century (Progressivism, the New Deal, the Fair Deal, the Great Society).

173 The Thirties (1)
Special studies in the intellectual and political-economic life of this crucial decade in America. Such topics as: New Deal Legislation, the activities of the Communist Party, "group" drama and the proletarian novel, advertising and other mass media (the movies, radio, etc). The rise of native fascist movements, evangelicalism and the rise of neo-othodoxy, and agricultural unrest and reform will be considered.

174A-B-C American Intellectual History (1-1-1)
Same as American and Comparative Culture 110A-B-C. A study of the major ideas, belief-systems, and values in American intellectual history. Special emphasis on the "Americanization" of such European philosophies as Calvinism, Rationalism, Idealism, Darwinism, Marxism, Freudianism, and Existentialism. Students are expected to have some background in either literature, philosophy, political theory, or theology.

175 California in Modern America (1)
California variations of major themes and reform movements in American history: immigration, minorities, nativism, urbanization, progressivism, the New Deal, modern conservatism.

176A-B American Foreign Relations (1-1)
Same as American and Comparative Culture 109A-B. A survey of the evolving relationship between America and the world, with emphasis on those factors which have shaped the foreign policies of the United States.

177 The Impact of the Cold War on American Society (1-1)
An examination of certain domestic implications of the Cold War, to include the rise of the military-industrial complex, the politics of the space race, the changing character of the American economy, the threat to traditional democratic procedures posed by Cold War institutions, and the problems of the American university.

178A Nineteenth-Century American Ethnography (1)
Same as American and Comparative Culture 104A. Examination of major interpretations of American society and culture from the Revolution to the late nineteenth century with emphasis upon intersectional differences and similarities and the emergence of a distinctively American national character.

178B Twentieth-Century American Ethnography (1)
Same as American and Comparative Culture 104B. Examination of major interpretations of modern American Society and culture with emphasis upon the impact of urbanization and industrialization upon traditional lifeways and the interrelationships among contemporary institutions.

179 America in World Perspectives (1)
Interaction of American and world history; foreign awareness of American growth; the teaching of American history in the non-American world; contemporary world images of the United States.

184 The Copernican Revolution (1)
Speculations about the origin, constituents, and structure of the universe from antiquity to the eighteenth century. Emphasis on the relations of cosmological thought to religion, philosophy, and literature and on the revolution in cosmological thought wrought by Copernicus and his allies.

185 The Darwinian Revolution (1)
Scientific explanations of the origin of species from the early eighteenth century to the present. Emphasis on the ways in which biologists dealing with the species problem have influenced and been influenced by society and on the development of evolutionary theory by Darwin, his allies, and his successors.

186 Birth of the Nuclear Age (1)
Formation of the Rutherford-Bohr planetary model of the atom, exploration of the nucleus down to 1939, creation and use of nuclear weapons during World War II, and the development and social implications of nuclear physics and technology since 1945.

190A-B Senior Project (1-1)
An initial quarter of individual background study in primary and secondary sources, followed by group interaction in the context of a senior seminar.

194 Studies in History (1)
Courses on various subjects taught infrequently.

195 Special Studies in History for Secondary School Teachers (1)
Courses offered in conjunction with the Office of Teacher Education to serve particularly the needs of secondary school teachers in the field of History.

197 Special Projects (1)
Individual project directed towards a specific era or topic, with paper and/or examination as instructor may require. Consultation with instructor necessary prior to registration. May be repeated.

198 Experimental Group Study (1)
Open to three or more students who agree as a group on a particular topic or theme of study and arrange with a professor of their choice for academic consultation (one to two hours weekly) and evaluation. Consultation with instructor necessary prior to registration. May be repeated.

199 Independent Reading (1)
Individual program with regular consultations and/or examination as instructor may require. Consent of instructor necessary prior to registration. May be repeated.

Graduate Courses in History

Historiography

200A-B Historiography (1-1)
A historical and analytical study of the interaction of the past and its interpreters. The first quarter focuses upon the role of "climates of opinion" since the Enlightenment in shaping and being shaped by the work of the great historians. The second quarter serves as an introduction to the relevant perspectives of psychology, anthropology and sociology.

Colloquia

230A-B-C The Literature and Interpretations of European History (1-1-1)
First quarter: 19th century; Second quarter: 20th century; Third quarter: Intellectual history.

240A-B-C The Literature and Interpretations of British History (1-1-1)
First quarter: 16th and 17th centuries; Second quarter: 18th century and Empire; Third quarter: 20th century.

270A-B-C The Literature and Interpretations of American History (1-1-1)
First quarter: 17th and 18th centuries; Second quarter: 19th century; Third quarter: 20th century.

Seminars

235A-B European History (1-1)

245A-B British History (1-1)

275A-B American History (1-1)

Special Studies

280 Special Topics (1) May be repeated.
Lectures, readings, and discussions on subjects more limited in scope than those included in the year-long colloquia.

285 Special Methods (1) May be repeated.
A course designed to develop particular research skills.

298 Directed Research (1)
By consent. May be repeated.

299 Directed Reading (1)
By consent. May be repeated.

THE LANGUAGE LABORATORY

The Language Laboratory offers courses in a number of modern languages on a self-instructional basis. These courses are typically numbered K1A, K1B, and K1C, offered in three one-quarter sequences. The bulk of the work is done in the Language Laboratory with prerecorded dialogues, grammar drills, and

cultural units, accompanied by student textbooks and workbooks. Each student is expected to attend the Language Laboratory a minimum of one hour daily. The students, working at their own pace, are then examined on a regular weekly basis in one or more live contact hours with UCI faculty proficient in the given language. Even though these are basically self-instructional courses, students can receive full credit and will be given recorded grades by the testing teams on the termination of each quarter's work.

The courses offered by the Language Laboratory are:

ESL (English as a Second Language) K1A, K1B, K1C
Modern Hebrew K1A, K1B, K1C
Portuguese K1A, K1B, K1C
Spanish K1A, K1B, K1C

These are typically run in the normal sequence of fall, winter, and spring. However students are allowed to pace themselves either more rapidly or more slowly as their time and talents permit.

PROGRAM IN LINGUISTICS

Linguistics is a field of study with potential relationships with several disciplines concerned with language. Because of these various possibilities in emphasis and because linguistic studies are on the edge of territory as yet unexplored and therefore without precedent, the linguistic group in the School of Humanities has formulated programs which are highly flexible.

Students are encouraged to enroll in linguistic courses with varying perspectives and counsel with faculty across schools and departments. The student obtaining a B.A. in linguistics is expected to have some awareness of linguistic work beyond his own specialization.

The requirements of the program are designed to provide guidelines sufficient to give direction; each student's program will be an individual development between the student and his discipline. Although the program is suggested for those students who are primarily interested in the emphasis of language in their linguistic studies, if a student has an innovative idea for a course of study that would not follow this general plan, he may propose his plan to his advisors and petition for a change in the requirements. It is assumed that this would occur after finishing the core courses (Linguistics 50, 101, 102, 103).

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: See page 131.

Program Requirements

1) Linguistics 50, 101, 102, 103;

2) Four additional upper-division courses in linguistics such as: Psycholinguistics; Socio-linguistics; Anthropological linguistics; Mathematical linguistics;

Philosophy of Language; Field Methods; Formal Grammars; Semantics; Linguistics and Poetics; History of the English, French, German, Russian, or Spanish language; and others as offered from time to time which are linguistically oriented. Note that these are offered across school lines.

3) Three courses beyond 2C in a single foreign language;

4) One of the following:
   (a) three courses in a non-Indo-European language, or
   (b) three courses of Latin or Greek.*

Faculty of the Program in Linguistics

Richard Barrutia, Ph.D. University of Texas, *Associate Professor of Spanish*
Peter Colaclides, Ph.D. University of Athens, *Professor of Classics*
Henri Diament, Ph.D. Columbia University, *Assistant Professor of French*
Jared Gordon, Ph.D. University of California, Los Angeles, *Assistant Professor of Russian*
Mary Ritchie Key, Ph.D. University of Texas, *Assistant Professor of Linguistics*
Stanley M. Munsat, Ph.D. University of Michigan, *Associate Professor of Philosophy*
Alan Shaterian, Ph.D. University of California, Berkeley, *Assistant Professor of German*
Tracy D. Terrell, Ph.D. University of Texas, *Lecturer in Spanish*
William D. Truesdell, Ph.D. Brown University, *Assistant Professor of Spanish*
Douglas Walker, Ph.D. University of California, San Diego, *Assistant Professor of French*

Courses in Linguistics

50 Introduction to Linguistics (1)
Beginning course surveying the scope of linguistics. Linguistic analysis and language structures illustrated by languages from many areas of the world.

101 Linguistic Analysis I: Articulatory Phonetics (1)
Practice in the perception, production, and transcription of phonetic phenomena in various languages of the world. Prerequisite: Linguistics 50.

102 Linguistic Analysis II: Grammar (1)
Methods of analysis on utterances larger than the word. These include phrase types and clause types, as well as sentences, paragraph structures, and discourse. Various languages will illustrate various types of structures. Prerequisite: Linguistics 50 or consent of instructor.

103 Linguistic Change and Language Comparison (1)
An introduction to the methods of historical analysis of language. The classification of languages and aspects of language change will be studied by internal reconstruction and the comparative method. Prerequisite: Linguistics 50 or consent of instructor.

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*In the case of a student taking Greek or Latin beyond 2C to fulfill requirement (3), three courses of a modern foreign language must be substituted to fulfill this requirement.

150 Studies in Linguistics
Topic varies depending upon availability and interest of staff.

151 Phonological Analysis
An introduction to the study of phonological systems. This course consists of problems in the analysis of phonetic data from a wide variety of languages and the formalization of the description of phonological systems within the generative-transformational theoretical framework. Prerequisite: Linguistics 101.

190 Directed Reading

199 Individual Study

200 Studies in Linguistics
Topic varies depending upon availability and interest of staff.

250A-B Romance Linguistics
Historical development of modern Romance languages from Vulgar Latin. Taught in English. Prerequisites: Fundamentals of Latin; knowledge of French, Spanish, or Italian.

Additional Linguistics Courses

Classics

Full undergraduate offerings in Greek and Latin.

Classics 187 Selected Topics in Greek and Latin Linguistics
Classics 200 Selected Topics in Greek and Latin Linguistics

English

English 181 The Structure of English (1)
English 184 History of the English Language (1)
English 187 Selected Topics in English Linguistics (1)
English 200 Selected Topics in English Linguistics (1)

French

French 131 Senior Seminar in Linguistics
French 187 Selected Topics in French Linguistics
French 200 Selected Topics in French Linguistics (1)
French 201 History of the French Language (1)
French 202 Contrastive French Phonology (1)
French 203 Contrastive French Morphology and Syntax (1)
French 208 Stylistics (1)

German

German 180 Structure and History of the German Language
German 187 Selected Topics in Germanic Linguistics
German 200 Selected Topics in Germanic Linguistics (1)
German 201 History of the German Language (1)
German 202 Contrastive German Phonology (1)
German 203 Contrastive German Morphology and Syntax (1)
German 204 Survey of Germanic Languages (1)
German 205 Introduction to Middle High German (1)

Humanities

Humanities 291 Linguistics and Poetics

Philosophy

Philosophy 135 Philosophy of Language (1)

Russian

Russian 180 Structure and History of the Russian Language
Russian 187 Selected Topics in Russian Linguistics
Russian 200 Selected Topics in Russian Linguistics

Spanish

Spanish 187 Selected Topics in Spanish Linguistics
Spanish 200 Selected Topics in Spanish Linguistics (1)
Spanish 201 History of the Spanish Language
Spanish 202 Contrastive Spanish Phonology
Spanish 203 Contrastive Spanish Morphology and Syntax
Spanish 250A-B Romance Linguistics (1-1)

DEPARTMENT OF PHILOSOPHY

Philosophy addresses itself to questions that arise insistently in every area of human experience and in every discipline within the University. Each discipline inevitably poses problems concerning the nature of the standards appropriate to it and the place of its subject matter within the total framework of human knowledge. If we are to understand science or art or literature, or such human practices as morality and religion, we are bound to address ourselves to philosophical issues relating to their nature, the uses of reason appropriate to them, and the contributions they make to our understanding and appreciation of ourselves and the world in which we live.

Undergraduate Program

Instruction in philosophy relies essentially upon discussion in which students are active participants. Wherever possible, therefore, classes are severely limited in size in order to permit sustained dialogues between student and instructor.

Some of the courses offered are of general interest to all students. Others are designed to explore issues that arise in selected and special disciplines. Among these are courses in the philosophy of science and of art. The staff should be consulted for advice about courses best suited to the specialized needs of particular students.

The program of course offerings is also designed for those majors in philosophy whose intention may be either to enter some professional school upon graduation (e.g., law) or to engage in graduate work in philosophy.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

Philosophy 50, Philosophy 120A-B-C. Two of the following: 100A-B, 110A-B, 115A-B; two additional quarter courses from Philosophy 101-199.

Graduate Programs

Students entering graduate work at Irvine should discuss their plans with the Graduate Advisor and begin immediately to shape a program of study. The work of graduate students is officially under the supervision of the Graduate Advisor until the student is admitted to candidacy (see below). However, students are encouraged to seek the counsel of any and all members of the Department whose recommendations the student would deem helpful. It is hoped that there will be a close intellectual relationship between graduate student and professor in order to provide the student with optimum conditions for philosophical development and to expedite his progress toward advanced degrees. In addition, the Department sponsors a series of colloquia each year. Participation in these colloquia is an important part of the graduate student's training.

Master of Arts in Philosophy

There is no list of course requirements for the M.A. degree. The M.A. program in Philosophy minimally takes one year. The student may elect to follow either of the following routes to the degree:

a) write a thesis on a subject to be chosen on consultation with his advisor and defend his thesis in an oral examination, *or*
b) satisfy the Logic and History of Philosophy requirements for the Ph.D. (see below).

Application for admission to candidacy for the M.A. degree is not automatic, but requires formal application to the Dean of the Graduate School via the Philosophy Department Office. Application must be made with the recommendation of the Philosophy Department and should take place at the beginning of the quarter in which the student is expected to complete the requirements listed above.

Doctor of Philosophy in Philosophy

There is no set number of courses required for the Ph.D., thus allowing course work to be tailored to the individual student's needs and interests. However, as a prerequisite for the Ph.D. degree, every student is required to have some experience in teaching and will enroll in three sections of Philosophy 399 (University Teacher Training) as the means of satisfying this requirement.

The Ph.D. program is designed to take four years for the normally qualified student. In exceptional cases it may be possible to obtain the degree within

three years. A Master's Degree is not a prerequisite for the Ph.D. The requirements for the Ph.D. degree are as follows:

a)**Tools of research,** to be satisfied by demonstrating proficiency in a single appropriate foreign language* *or* by passing with a grade of B or better five to six courses at the graduate level in a discipline or disciplines outside of the Philosophy Department. Approval for the latter alternative will be granted by the Department only if, in its judgment, the courses form an integrated unit in light of the student's research interest.

b)**Logic,** to be satisfied by passing Philosophy 152 with a grade of B or better *or* by passing an examination on equivalent material upon petition. (The Department must grant the petition; it is required in order to allow the Department sufficient time to prepare the examination.)

c)**History of Philosophy,** to be covered by written examinations in the following areas: Ancient Philosophy; Medieval Philosophy; Modern Philosophy (Rationalism and Empiricism); Kant and Nineteenth-Century Philosophy (including Mill and Peirce).

These examinations will take three hours each and will be offered at the beginning of every quarter. A student may attempt as many at a time as he wishes. Each examination will consist of three questions with no options drawn from a list of 12 questions.**The lists of 12 questions will be made available to the student upon entering graduate school, and he must pass all four examinations by the beginning of the seventh quarter of graduate work. Except for this provision, there is no limit on the number of times a student may elect to attempt any of these examinations.

d)**Portfolio** of three papers representing the student's best work in three separate areas of Philosophy (e.g., Ethics, Philosophy of Language, and Epistomology). These papers need not have been written expressly for this purpose, but may have been originally submitted for course work.

e)**Admission to candidacy and the writing of a thesis.** Upon successful completion of the above requirements, the student will apply for admission to candidacy for the Ph.D. degree by filling out the appropriate forms and returning them to the Philosophy Department office. A Candidacy Committee including one or two members from an academic area outside of Philosophy is then appointed by the Graduate Council. This Committee administers an oral examination to determine whether the student is qualified to begin work designed to lead to the completion of a thesis.

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*The foreign language examinations are administered by the Department of Philosophy. They are two hours in length and consist in translating, with the aid of a dictionary, passages from two books. Students wishing information as to courses to prepare them for these examinations and dates when these examinations will be given should consult the Philosophy Department Office, Room 200F of the Humanities-Social Sciences Building (833-6526).

**For each examination, the student has the option of supplying one question of his own invention. This question will then appear on his examination in place of the question deemed by the department to be the closest to it. In this case, the student will be evaluated on the question as well as on the answer to it.

Upon passing this oral examination, the student becomes a candidate for the Ph.D. degree and will be assigned to the Doctoral Committee by the Graduate Council. The Doctoral Committee then supervises the student's further course work and research, as well as the actual writing of the doctoral thesis.

f)**The defense of the thesis.** At a suitable point during the development of the thesis, the Doctoral Committee administers an oral examination, the focus of which is the content of the thesis itself. If at all possible, this examination will be given while the student is still in residence.

Philosophy Faculty

Nelson C. Pike, Ph.D. Harvard University, *Professor of Philosophy and Chairman of the Department*
Gordon G. Brittan, Ph.D. Stanford University, *Associate Professor of Philosophy*
Eike-Henner Kluge, Ph.D. University of Michigan, *Assistant Professor of Philosophy*
Joseph F. Lambert, Ph.D. Michigan State University, *Professor of Philosophy*
A. I. Melden, Ph.D. University of California, Berkeley, *Professor of Philosophy*
Stanley M. Munsat, Ph.D. University of Michigan, *Associate Professor of Philosophy*
Gerasimos Santas, Ph.D. Cornell University, *Professor of Philosophy*
Guy J. Sircello, Ph.D. Columbia University, *Associate Professor of Philosophy*
Peter Woodruff, Ph.D. University of Pittsburgh, *Assistant Professor of Philosophy*

Undergraduate Courses in Philosophy

5 Problems of Philosophy (1)
This course varies in content and structure from quarter to quarter, depending on the instructor in charge. A central aim is to introduce students to certain basic philosophical problems and concepts, methods, and techniques, with emphasis on both discussion and writing.

15 Introduction to Ethics (1)
Studies of selected writings from the history of ethics. Problems dealt with include the nature of the good life and the moral justification of conduct.

50 Elements of Logic (1)
A systematic discussion of the rules governing valid inference.

Unless otherwise specified, one course in philosophy is required as a prerequisite for each of the following courses. In special cases the requirement may be waived. Inquiries should be directed to the staff.

100A-B Metaphysics (1)
A study of the nature of reality and existence, dealing with such problems as substance, free will, abstract objects, identity; 100A prerequisite for 100B. No credit given for 100A without completion of 100B; 3 units of credit per quarter.

110A-B Theory of Knowledge (1)
An examination of the central problems of theory of knowledge: the role of perception in the acquisition of knowledge, the nature of evidence and the distinction between knowledge and belief, and the nature of truth and certainty; 110A is prerequisite for 110B. No credit given for 110A without completion of 110B; 3 units of credit per quarter.

115A-B Ethics (1)
Selected topics from recent moral philosophy, such as the naturalistic fallacy, the distinction between "is" and "ought," rule and act utilitarianism; 115A is prerequisite for 115B. No credit given for 115A without completion of 115B; 3 units of credit per quarter.

120A History of Ancient Philosophy (1)
An examination of the central philosophical themes about man, society, and nature in the Pre-Socratics, Socrates, Plato, Aristotle, the Stoics, the Epicureans, and the Skeptics. Prerequisite: One course in philosophy or consent of instructor.

120B History of Medieval Philosophy (1)
The purpose of this course is to introduce the student to the more important thinkers of the Middle Ages (approximately 400-1400 A.D.) and their respective philosophical systems. The readings will include selections from Plotinus, Augustine, Anselm, Avicenna, al-Ghazali, Averroes, Aquinas, Scotus, and Ockham. Prerequisite: Philosophy 120A.

120C History of Modern Philosophy (1)
A study of some major developments in Western Philosophy from Descartes to Kant. Attention is focused on Kant's theory of time and space and on Berkeley's phenomenalism. Readings from Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. Prerequisite: Philosophy 120B.

121 Plato (1)
A discussion of the central subjects in Plato's Dialogues, including Socratic questions, Socratic ethics, Platonic ethics and social philosophy, Plato's theory of ideas, and his views on knowledge and perception, language and art. Lectures and student participation. Prerequisite: Philosophy 120A or consent of instructor.

122 Aristotle (1)
The basics of Aristotle's philosophy: his philosophy of language, logic, epistemology, philosophy of nature, metaphysics, ethics, and philosophy of art.

***125 Medieval Philosophy** (1)
This course is intended to familiarize the student with more specific areas of medieval philosophy. To this end, a particular problem, such as that of universals, will be studied in some depth. Prerequisite: Philosophy 120B or consent of instructor.

***126 Continental Rationalism** (1)
The function of this course is to acquaint the student is some detail with representative works of the more outstanding continental rationalists. Readings will consist of selections from Descartes, Malebranche, Leibniz, and Spinoza. Prerequisite: Philosophy 120C or consent of instructor.

127 British Empiricism (1)
An examination of the writings of Locke, Berkeley, and Hume with special attention to the problems of substance, perception, and knowledge. Prerequisite: Philosophy 120C or consent of instructor.

***128 Kant** (1)
Typically a fairly close reading of the first half of the *Critique of Pure Reason.* Prerequisite: Philosophy 120C or consent of instructor.

129 Hegel (1)
An intensive and analytical study of selected portions of *The Phenomenology of Mind.* Prerequisite: 120C.

130 Philosophy of Mind (1)
An examination of such psychological concepts as motive, intention, desire, memory, intelligence, belief. Prerequisite: Philosophy 50 or consent of intructor.

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*Not offered 1971-72.

135 Philosophy of Language (1)
A critical exploration of selected theories of meaning such as Reference, Denotation-Connotation, Stimulus-Response, and Speech Act, with attention to their shortcomings as well as the valuable insights which they provide. Prerequisite: Philosophy 50 or consent of instructor.

***140 Philosophy of History** (1)
The analysis of issues such as the relativity of historical knowledge, the place of moral judgments in historical writing, the nature of historical explanation, and the "meaning" of history. Prerequisite: 50 or consent of the instructor.

145 Social and Political Philosophy (1)
A philosophical probe of the concept of Civil Disobedience. Attention is focused on the defining features of civilly disobedient behavior with some discussion of the *contract theory of the state, the concept of natural law and the Nuremberg Principles.* Readings from the works of Plato, Sophocles, Henry Thoreau, Martin Luther King, M. K. Gandhi, Bertrand Russell, and a number of legal commentators such as Harrison Tweed, Charles Black, and Abraham Fortus.

***146 American Philosophy** (1)
This course examines the work of a major American philosopher such as Peirce, James, Dewey, Lewis, Sellars, or Quine.

150 Symbolic Logic (1)
An intensive introduction to methods of proof in formal logic, covering the standard propositional and quantificational calculi, the theory of identity, and theory of descriptions.

151 Mathematical Logic I (1)
A study of the proof theory and model theory for propositional logic. Prerequisite: Philosophy 150.

152 Mathematical Logic II (1)
A study of the proof theory and model theory for the logic of quantifiers with identity. Prerequisite: Philosophy 151.

***153 Topics in Mathematical Logic** (1)
A selected topic in advanced mathematical logic will be discussed. Typical examples are proof theory, model theory, recursive functions, set theory, combinatory logic. Prerequisite: Philosophy 152 or consent of instructor.

155 Philosophy of Logic (1)
An examination of fundamental questions raised by contemporary formal logic. Topics discussed may include the existence and nature of propositions, theory of entailment, descriptions and existential presuppositions, among others. Prerequisite: consent of instructor.

***160 Introduction to Philosophy of Science** (1)
Systematic examination of leading problems in the philosophy of science, for example, the nature of mathematics, explanation, confirmation, and the limits of scientific explanation.

165 Philosophy of Religion (1)
A philosophical inquiry into the nature and existence of God. Attention is focused on the literature of Western mysticism and Judeo-Christian theology. Topics include the phenomenology of religious experience, the attributes of God, and the traditional arguments for and against the existence of a Divine Being. Readings from the works of Rudolf Otto, St. Anselm, St. Thomas, David Hume, William Paley, and others.

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*Not offered 1971-72.

170 Introduction to Aesthetics (1)
A sustained analytical inquiry into (1) the expressiveness of art, (2) the subjectivity of aesthetic experience, and (3) the nature of aesthetic "response."

***171 Theory of Art** (1)
Interpretation and evaluation of some traditional and recent metaphysical theories of art including those of Plato, Aristotle, Plotinus, Hegel, Schopenhauer, Dewey, Heidegger, and Sartre.

175 Philosophy of Education (1)
Same as Education 175. Theories of education, past and present. The aims and methods of education. The philosophical assumptions about the nature of man and the nature of human knowledge on which theories of education are based. Among the theories discussed will be those of Plato, Augustine, Rousseau, Locke and Mill, Dewey, Whitehead, the Freudians, and the Behaviorists.

***180 Contemporary Analytic Philosophy** (1)
A selected topic will be discussed from the analytic point of view, with consideration of the views of contemporary philosophers on the subject. Recent topics include: the method of analysis and philosophy of language; theory of perception. May be repeated for credit.

***189 Philosophy of Sartre** (1)

190 Topics in Current Research (1)

198 Senior Proseminar (1)

199 Directed Special Studies (1)

Graduate Courses in Philosophy

Since seminar and graduate course topics vary with the occasions on which they are offered, they may be repeated for credit. Open to graduate students and upper-division undergraduates by consent of instructor.

***200 Seminar in Metaphysics** (1)
Prerequisite: consent of instructor.

***210 Seminar in Theory of Knowledge** (1)
Prerequisite: consent of instructor.

***215 Seminar in Ethics** (1)
Prerequisite: consent of instructor.

220 Seminar in History of Philosophy (1)
Prerequisite: consent of instructor.

221 Seminar in Philosophy of Plato (1)
Prerequisite: consent of instructor.

***222 Seminar in Philosophy of Aristotle** (1)
Prerequisite: consent of instructor.

***228 Seminar in Philosophy of Kant** (1)
Prerequisite: consent of instructor.

***230 Seminar in Philosophy of Mind** (1)
Prerequisite: consent of instructor.

235 Seminar in Philosophy of Language (1)
Prerequisite: consent of instructor.

250 Seminar in Logic (1)
Prerequisite: consent of instructor.

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*Not offered 1971-72.

***252 Seminar in Set Theory** (1)
Prerequisite: consent of instructor.

255 Seminar in Philosophy of Logic (1)
Prerequisite: consent of instructor.

***260 Seminar in Philosophy of Science** (1)
Prerequisite: consent of instructor.

***265 Seminar in Philosophy of Religion** (1)
Prerequisite: consent of instructor.

***270 Seminar Topics in Aesthetics** (1)
Prerequisite: consent of instructor.

***280 Seminar in Contemporary Philosophy** (1)
Prerequisite: consent of instructor.

299 Directed Research (1)
Prerequisite: consent of instructor.

399 University Teacher Training (1)
Prerequisite: consent of instructor.

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*Not offered 1971-72.

DEPARTMENT OF SPANISH AND PORTUGUESE

The main objectives of the program in Spanish and Portuguese are:

1. To develop competence in the ability to understand, speak, read, and write Spanish and Portuguese.
2. To provide through the knowledge of these two languages an understanding and appreciation of their literature and culture.

All courses in Spanish and Portuguese, unless specifically stated, are taught in the foreign language. First-year courses meet in the classroom four times a week and in the language laboratory twice a week. By the end of the first year, students attain mastery of the basic structure of the language and ability to converse on everyday topics as well as to read and write on an elementary plane. Self-instructional courses in both Spanish and Portuguese are also available.

Students will be placed in Spanish courses according to their years of previous study and their grades. In general, one year of high school work is equated with one quarter of UCI work. Students who present two years of high school Spanish may not enroll for credit in Spanish 1A; students who present three years of high school Spanish may not enroll for credit in Spanish 1A or 1B. Students who present four years of high school Spanish may not enroll for credit in Spanish 1A, 1B, or 1C.

In the second year, emphasis is put on gradually raising the level of the student's ability to read and write. A third-year course of two quarters stresses

composition as opposed to translation. Further, a course in phonetics perfects pronunciation, introduces theoretical considerations, and presents historical and dialectal variants. The introductory courses in literature, also in the third year, emphasize the analysis and appreciation of complete literary works by genre rather than the study of many short selections of innumerable authors in an anthology. The courses in Hispanic civilization combine a panoramic over-view with a close look at a specific country or topic.

Although no major in Portuguese is offered, advanced literature courses are available.

Students are encouraged to participate in programs of study abroad during the summer and the junior year.

Elected representatives of the undergraduate majors, the graduate students, and the teaching assistants participate with full voting rights in Department meetings.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: See page 131.

Departmental Requirements

Spanish 10A-B, 11, 12A-B-C, 110A, B, or C; Linguistics 50. In addition, each student chooses one of the following three emphases:

A. Literature: Four upper-division courses in literature with a minimum of one in Spanish American Literature and one in Spanish Literature.
B. Culture: Two courses in Latin American literature; Spanish 110A-B-C.
C. Linguistics: Linguistics 101, 102, 103; one course in the philosophy of language (Philosophy 135).

Graduate Programs

Master of Arts in Spanish

The candidate is expected to have the equivalent of our undergraduate major. He takes a minimum of 11 courses, eight of which must be graduate courses. Two of the 11 courses must be in linguistics. A maximum of two courses may be transferred from another university but a maximum of five from another University of California campus. Proficiency (defined as the equivalent of the level attained at the end of course 2C) in a foreign language other than the major language is required. The comprehensive examination, in part written, in part oral, will be based both on a reading list and the courses taken by the student and will also test the student's ability to express himself correctly in Spanish. No thesis is required. Students should have a knowledge of the fundamentals of Latin (equivalent to the level attained at the end of Latin 1B) as a prerequisite for the courses in the history of the Spanish language.

Doctor of Philosophy in Spanish

A. Language Requirements

1. A reading knowledge of Portuguese and two other foreign languages relevant to the student's area of specialization and subject to the approval of the department.

2. The fundamentals of Latin (the equivalent of UCI courses Latin 1A and 1B) is a prerequisite for the courses in Romance Linguistics and the course in the History of the Spanish Language.

B.**Course Requirements**

1. Two graduate courses in Spanish Linguistics, one of which should be diachronic (Spanish 200A-B, 201) and the other synchronic (Spanish 202, 203).

2. A minimum of 18 graduate courses or seminars in Spanish, Spanish-American literature, and Luso-Brazilian literature beyond the B.A.

3. A minimum of three courses outside the Department of Spanish and Portuguese in areas related to the field of specialization.

4. One of the above courses in (2) or (3) should be a course in literary criticism.

C.**Teaching**

Since the overwhelming majority of Ph.D. candidates plan to teach, this Department recognizes its responsibility to train them as teachers. Therefore, all candidates for the Ph.D. without previous teaching experience are required to teach under supervision at UCI one course in each of three quarters.

D.**Comprehensive Examination**

The student is admitted to candidacy if he passes by a majority vote an oral examination administered by a Candidacy Committee appointed by the Graduate Council. The Candidacy Committee is composed of five members, of whom four will be from the Department. The oral examination will be preceded by a written examination as follows:

1. The student will choose one of the following four fields which will constitute one-half of the examination. He will also be held responsible for a knowledge of the major Luso-Brazilian works in his field of specialization. Linguistics and medieval literature; Renaissance and Golden Age; 18th, 19th, and 20th century Spanish literature; Spanish-American literature.

2. The other half of the examination will be based on the following complementary fields: one of the above fields closely related to the field of specialization; the literary period of specialization in two non-Iberic countries; the theory and development of a given literary genre, i.e. the novel, the short story, epic poetry, etc.

E.**Dissertation**

A dissertation topic will be chosen by the candidate which will normally, but not necessarily, fall within one of the major fields covered by the qualifying examination.

Three faculty members appointed by the Graduate Council constitute the Doctoral Committee which supervises the preparation and completion of the doctoral thesis. The Doctoral Committee supervises a final examination, the focus of which is the content of the doctoral thesis. Ordinarily, this examination will not be given after completion of the thesis but rather at an appropriate point during its development. Such final examinations will normally be given while the graduate student is in residence. The Doctoral Committee certifies that a completed thesis is satisfactory through the signatures of the individual Committee members on the title page of the accepted thesis.

Spanish and Portuguese Faculty

Julian Palley, Ph.D. University of New Mexico, *Professor of Spanish and Chairman of the Department*
Howard A. Appel, M.A. University of Washington, *Supervisor of Teacher Education-Foreign Languages* (on leave 1971-72)
Richard Barrutia, Ph.D. University of Texas, *Associate Professor of Spanish and Director of the Language Laboratory and the Program in ESL and Non-Indo-European Languages* (on leave 1971-72)
Andres Diez-Alonso, M.A. Instituto Caro y Cuervo (Bogota, Colombia), *Acting Assistant Professor of Spanish*
Paul Gendrop, Ph.D. University of Paris, *Visiting Lecturer in Comparative Culture, Spanish and Portuguese and Fine Arts*
Seymour Menton, Ph.D. New York University, *Professor of Spanish and Portuguese*
Hector Orjuela, Ph.D. University of Kansas, *Professor of Spanish*
Cèsar Rodríguez-Chicharro, M.A. Universidad Nacional Autònoma de Mexico, *Lecturer in Spanish*
Zidia Stewart, M.A. Michigan State University, *Lecturer in Spanish and Portuguese*
Tracy Terrell, Ph.D. University of Texas, *Assistant Professor of Spanish*
William Truesdell, Ph.D. Brown University, *Assistant Professor of Spanish*
Juan Villegas, Ph.D. Universidad de Chile, *Professor of Spanish*

Courses in Portuguese

K1A-B-C Fundamentals of Portuguese (1-1-1)
A self-instructional course in the fundamentals of Portuguese for highly motivated students who have already studied two years of another language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.

140A-B-C Brazilian Prose Fiction (1-1-1)
Prerequisite: Portuguese K1C or equivalent.

141 Brazilian Civilization (1)
Prerequisite: Portuguese K1C or equivalent.

142 Brazilian Short Story (1)
Prerequisite: Portuguese K1C or equivalent.

143 Brazilian Poetry (1)
Prerequisite: Portuguese K1C or equivalent.

144 Masterpieces of Portuguese Literature (1)
Prerequisite: Portuguese KIC or equivalent.

Lower-Division Courses in Spanish

1A-B-C Fundamentals of Spanish (1-1-1)

K1A-B-C Fundamentals of Spanish (1-1-1)
A self-instructional course in the fundamentals of Spanish for highly motivated students who have already studied two years of another foreign language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.

2A-B-C Spanish Reading and Composition (1-1-1)
Prerequisites: normally three years of high school Spanish or one year college Spanish.

10A-B Advanced Composition (1-1)
Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of selected grammatical topics. Prerequisite: completion of Spanish 2C or equivalent.

11 Spanish Phonetics (1)
Prerequisite: Spanish 2C or equivalent.

12A-B-C Introduction to Spanish Theatre, Prose Fiction, and Poetry (1-1-1)
Prerequisite: Spanish 2C or equivalent.

Upper-Division Courses in Spanish

The prerequisite for all upper-division literature courses is Spanish 12A-B-C or equivalent.

105 Advanced Composition and Stylistics (1)
Prerequisite: Spanish 10B or equivalent.

110A-B-C Hispanic Civilization (1-1-1)
Each of the three quarters will focus on a different country or topic. The course content will vary from year to year. Prerequisite: Spanish 10B or equivalent.

115 Masterpieces of Spanish Medieval Literature (1)

117A-B-C Golden Age Literature (1-1-1)

119A-B-C Nineteenth-Century Spanish Literature (1-1-1)

120A-B-C Twentieth-Century Spanish Literature (1-1-1)

130A-B-C Spanish-American Prose Fiction (1-1-1)

131A-B-C Spanish-American Poetry, Theatre, Essay (1-1-1)

133 Argentine Literature (1)

190 Reading and Conference (1)
May be repeated.

198 Directed Group Study (1)
May be repeated.

Graduate Courses in Spanish

200 Selected Topics in Spanish Linguistics (1)

201 History of the Spanish Language (1)
Prerequisite: Fundamentals of Latin.

202 Contrastive Spanish Phonology (1)

203 Contrastive Spanish Morphology and Syntax (1)

204 Transformational Grammar (1)

210A-B-C Medieval Literature (1-1-1)

215A-B-C Golden Age Prose Fiction (1-1-1)

216A-B Golden Age Lyric Poetry (1-1)

217A-B Golden Age Theatre (1-1)

219A-B-C Nineteenth-Century Spanish Literature (1-1-1)

220A-B Modern Spanish Novel (1-1)

221A-B Modern Spanish Poetry (1-1)

222A-B Modern Spanish Theatre (1-1)

233A-B-C Twentieth-Century Spanish-American Prose Fiction (1-1-1)

234A-B-C Spanish-American Poetry (1-1-1)

235A-B Latin American Essay (1-1)

250A-B Romance Linguistics (1-1)
Prerequisites: Fundamentals of Latin; knowledge of French, Spanish, or Italian.

260 Studies in Spanish Language and Literature (1)
May be repeated.

290 Reading and Conference (1)
May be repeated.

299 Dissertation Research (1)

In the afternoon, they even had a rock and roll band.

School of Physical Sciences

Frederick Reines
Dean

The School of Physical Sciences offers both preprofessional training and general education in the Departments of Chemistry, Mathematics, and Physics. The faculty, active in research and graduate education, is at the same time vitally concerned with undergraduate teaching. Curricula of the School are designed to meet the needs of a wide variety of students ranging from those with little technical background who seek insight into the activities and accomplishments of physical sciences to those seeking a comprehensive understanding that will prepare them for creative research in physical science.

Over the course of the past century and a half, physics, chemistry, and mathematics have evolved into interdependent but separate intellectual disciplines. This development is reflected in the departmental structure of the School of Physical Sciences. In the same period, these fundamental disciplines have moved into domains of abstraction unimagined by early scientists. This trend to abstraction with its concomitant increase in understanding of the physical universe provides the major challenge to the student of the physical sciences. Mathematics, physics, and chemistry, while providing the foundation of the technology that dominates contemporary civilization, underlie to an ever-increasing extent the new developments in the biological and social sciences.

In recognition of the contribution students can make to the academic affairs of the School, a variety of responsibilities on school and departmental committees are given to undergraduate and graduate students.

Degrees Offered in the School

Chemistry	B.A., M.A., Ph.D.
Mathematics	B.A., M.A., Ph.D.
Physics	B.A., M.A., Ph.D.

Honors at Graduation

Criteria used by the School of Physical Sciences in selecting candidates for honors at graduation are as follows: *summa cum laude*, nearly perfect record; *magna cum laude*, significantly above Dean's Honors List; *cum laude*, average Dean's Honors List. The Dean's Honors List consists of students whose grade point average for a given quarter is at least 3.5, based on three or more classes taken for grade. Due consideration is given to unusual research creativity.

Undergraduate Programs

Each department offers courses that are of value to nonmajors and majors in the sciences. The programs for majors are designed to meet the needs both of students planning careers in other fields and of students planning graduate work that continues their major interest. In the belief that understanding and satisfaction follow more from depth than from breadth, the School offers no general survey course.

Planning a Program of Study

The undergraduate student, in consultation with his advisor, can choose courses of study leading to a major in one department. In carrying out this major, the student can often concentrate very heavily in a second department within the School, and, less frequently, can complete a double major.

Each student's study list card, to ensure validity, must carry the signature of the student's advisor.

All initial courses of study for majors include mathematics through calculus, and calculus is a prerequisite for much of the upper-division work in each major. A student interested in any of the physical sciences should continue his mathematical training beyond these prerequisite courses. Furthermore, the student interested in either physics or chemistry will usually include work in both of these subjects in his undergraduate career.

Although English is becoming increasingly the international language of science, much important scientific literature is still printed in foreign languages, and scientists need to communicate in person with foreign colleagues. Comprehension of at least one of the languages, French, German, or Russian, is an integral requirement of the preparation for majors in mathematics.

Precise and clear expression in written English will be expected in course work in the School. Students found wanting by the School may be required to enroll in English 28A-B-C.

Students in the physical sciences are urged to acquire a working knowledge of computer programming at an early stage of their university careers. This can be done by taking Information and Computer Science 1.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None (see departmental requirements).

Graduate Programs

A program of course work and research leading to the M.A. and Ph.D. degrees is offered in each of the three departments of the School. The individual programs are described in the following announcements of each department.

DEPARTMENT OF CHEMISTRY

Undergraduate Program

The major in Chemistry is elected by students planning careers in the chemical sciences and frequently also by those whose interests lie in biology, medicine, earth sciences, secondary education, business, and law. The curriculum of the Department is designed to satisfy the diverse needs of these students and others who may have occasion to study chemistry. The year course in General Chemistry is prerequisite to all study in the Department at more advanced levels and serves also as a thorough introduction to the varied aspects of modern chemistry for students who do not wish to pursue their studies beyond the introductory level. The Organic Chemistry course is required for Chemistry majors and for students of the life and earth sciences. Certain more advanced courses required of Chemistry majors may also be of particular interest to the latter groups, among others.

The undergraduate program of the Chemistry Department emphasizes close contact with research. Chemistry majors are urged to engage in research under the direction of a staff member and should, when possible, seek admission to the Honors sections of undergraduate courses.

Much of the important chemical literature is being and has been printed in foreign languages, principally German, Russian, and French. Reading competence in one or more of these languages is desirable and many graduate schools require the demonstration of such competence as a prerequisite for an advanced degree. Chemistry majors are encouraged to acquire this competence.

A chemistry major who seeks a secondary teaching credential in chemistry is urged to consult with his advisor and with the Office of Teacher Education early in his undergraduate career. Chemistry majors who plan subsequent study in medical, dental, or other professional schools should request information concerning admission requirements directly from the schools which they seek to enter. Those intending to pursue graduate studies in chemistry should discuss their plans with their academic advisors.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements

Chemistry:

One year of general chemistry: Chemistry 1 or 11 or equivalent.
One year of organic chemistry: Chemistry 51 or equivalent.
Three one-quarter courses in quantitative chemistry: Chemistry 150, 151, and 152, or equivalent.
One year of physical chemistry: Chemistry 131.
One quarter of inorganic chemistry: Chemistry 215.
Two courses in chemistry elected from those numbered 160-253 (of which Chemistry 180 may not be counted more than once).

Other sciences:

Twelve courses (4 or 5 quarter units) chosen from mathematics, physics, and biological sciences including:

(a) at least one year of calculus, and

(b) at least one year of college-level physics (including laboratory) for which calculus is either a prerequisite or corequisite.

(Neither Physics 3 nor Information and Computer Science 1 fulfills the above requirements.)

(The courses not specified under (a) and (b) may be taken on a Pass/Not Pass basis subject to the usual restrictions on Pass/Not Pass enrollment.)

Planning a Program of Study

The Departmental *Requirements for the Bachelor's Degree* in Chemistry are detailed above. In addition to the 15 required courses in chemistry, introductory year courses in mathematics and physics are required for the major as are an additional six courses in science and mathematics, which the student may select in accordance with his interests.

Three sample programs are presented below. These sample programs reflect the breadth of chemical science, which extends from chemical physics on the one hand to biochemistry on the other, and the latitude of choice left to the student in his choice of program. They should be regarded as suggestions designed to be consistent with the prerequisites of the various courses required for the major and the needs of students with certain special interests. Junior transfer Chemistry majors who, after consultation with their advisor, find they are deficient in Organic Chemistry, may postpone part or all of the quantitative laboratory sequence until the senior year.

These sample programs illustrate some of the many possible ways in which a chemistry major might arrange his schedule of courses. Only courses required or recommended by the School or Department are listed explicitly. Six quarters of foreign language are included in all three programs on the assumption that the majority of students will choose to obtain reading competence of a foreign language through course work. Courses listed as electives may be used as needed to satisfy University and school requirements listed on page 23. It should be recognized that courses such as biological science which count toward school or departmental requirements may be used simultaneously to satisfy University requirements if a student so desires. Program A below is not biased toward any particular area of chemistry; programs B and C contain, respectively, possible course selections for those wishing to pursue graduate studies in biochemistry and chemical physics.

Sample Programs

A.

	FALL	WINTER	SPRING
FRESHMAN	*ICS* 1 *Math.* 2A Elective *Chem.* 1A	*Physics* 5A *Math.* 2B Elective *Chem.* 1B	*Physics* 5B *Math.* 2C Elective *Chem.* 1C
SOPHOMORE	*Physics* 5C *Math.* 3A Elective *Chem.* 51A	*Physics* 5D *Math.* 3B Elective *Chem.* 51B	*Physics* 5E *Math.* 3C Elective *Chem.* 51C

JUNIOR	For. Lang. Elective *Chem.* 131A *Chem.* 150	For. Lang. Elective *Chem.* 131B *Chem.* 152	For Lang. Elective *Chem.* 131C *Chem.* 151
SENIOR	For Lang. Elective *Math.* 143A *Chem.* 213	For Lang. Elective *Chem.* 180 *Chem.* 215	For Lang. Elective *Chem.* 180 *Chem.* 202

B.

	FALL	WINTER	SPRING
FRESHMAN	Elective *Math.* 2A For Lang. *Chem.* 1A	Elective *Math.* 2B For Lang. *Chem.* 1B	Elective *Math.* 2C For Lang. *Chem.* 1C
SOPHOMORE	Elective *Math.* 3A *Chem.* 150 *Chem.* 51A	Elective *Math.* 3B *Physics* 5A *Chem.* 51B	Elective *Math.* 3C *Physics* 5B *Chem.* 51C
JUNIOR	For Lang. *Biol. Sci.* 101A *Chem.* 131A *Physics* 5C	For Lang. *Biol. Sci.* 101B *Chem.* 131B *Chem.* 152	For Lang. *Biol. Sci.* 101C *Chem.* 131C *Chem.* 151
SENIOR	*Biol. Sci.* 101E Elective Elective *Chem.* 213	*Biol. Sci.* 101F Elective Elective *Chem.* 215	*Biol. Sci.* 101G Elective *Biol. Sci.* 123 *Chem.* 202

C.

	FALL	WINTER	SPRING
FRESHMAN	*ICS* 1 *Math.* 2A Elective *Chem.* 1A	*Physics* 5A *Math.* 2B Elective *Chem.* 1B	*Physics* 5B *Math.* 2C Elective *Chem.* 1C
SOPHOMORE	*Physics* 5C *Math.* 3A For Lang. *Chem.* 51A	*Physics* 5D *Math.* 3B For Lang. *Chem.* 51B	*Physics* 5E *Math.* 3C For Lang. *Chem.* 51C
JUNIOR	For Lang. *Physics* 111A *Chem.* 131A Chem. 150	For Lang. Elective *Chem.* 131B *Chem.* 152	For Lang. Elective *Chem.* 131C *Chem.* 151
SENIOR	*Math.* 143A Elective *Chem.* 231 Elective	*Math.* 143B Elective *Chem.* 215 Elective	*Math.* 143C Elective *Physics* 112A *Chem.* 232

Graduate Programs

The Department offers programs leading to both the M.A. and the Ph.D. degrees in Chemistry. These programs are identical for the student during his first year of graduate work. The M.A. degree is granted in recognition of a broad knowledge of the facts and theories of modern chemistry, together with skill and competence in laboratory techniques; the Ph.D. degree is granted in recognition of the demonstrated ability to carry out independent research in chemistry.

Both programs rely on specific examinations of various kinds: area examinations over the general content of chemical knowledge, cumulative examinations over more recent specific developments in chemistry, and an oral candidacy examination in defense of original research propositions. Only the area examinations are required for candidates for the M.A. degree, but all three are required for the Ph.D. degree.

A comprehensive program of graduate courses is also available and is an integral part of the graduate program. The specific program most suitable for a particular graduate student will be recommended to him by the Department, taking cognizance of his performance on the initial area examinations.

Master of Arts in Chemistry

The requirements for the M.A. degree can be met through either one of two plans, as described below. For either plan, a minimum of three quarters in residence is required. Both plans require (1) successful completion of the area examinations. (2) In addition, Plan I (Thesis Plan) requires completion of an original thesis; Plan II (Course Examination Plan) requires the completion of ten graduate courses in chemistry with an average grade of B or better (Chemistry 290 and 291 may not be counted toward the total of ten courses, and Chemistry 280 may be counted only once).

The procedures for passing the area examinations are described in more detail in the section on the Ph.D. degree. The thesis required for the M.A. degree summarizes the results of original research performed by the student under the supervision of a faculty member. No oral examination is required in defense of the dissertation submitted for the M.A. degree.

Doctor of Philosophy in Chemistry

The principal requirements for the Ph.D. degree in Chemistry are six quarters in residence, admission to candidacy, and successful completion and defense of a dissertation reporting results of original research.

1. **Residence.** As many as three of the six quarters in residence may be waived for students who have had graduate work at another institution.

2. **Admission to candidacy.** Students entering graduate work in the program leading to the Ph.D. degree must pass area examinations in each of these three general fields of chemistry: physical chemistry, organic chemistry, and inorganic and nuclear chemistry. These examinations presume thorough preparation in the various areas at the level of undergraduate instruction. Area examinations are given in September, February, and May and must be success-

fully completed by the end of the third examination period after initial enrollment. A series of cumulative examinations given each month and more closely oriented toward current chemical research is also taken. Students shall begin taking the cumulative examinations in the month following successful completion of the area examinations and all subsequent examinations must be taken until the requirement is satisfied. Successful completion of four examinations within a maximum of 12 attempts satisfies this requirement.

An oral examination on original research propositions and on the student's thesis research topic is given within two quarters following completion of the cumulative examinations. Successful completion of the oral examination leads to recommendation for admission to candidacy. In the event of a failure on the oral examination, one re-examination is permitted within three months of the first.

Students must achieve admission to candidacy before the beginning of their ninth quarter of residence unless exceptional conditions justify an extension of time.

3.**Course Requirements.** The student is required to pass, with an average grade of B or better, the graduate courses specified for him by the Department. These courses will be chosen with his particular interests in mind and will ordinarily include six to eight one-quarter graduate courses. No minimum number is specified, however, and excellent performance in the area examinations will result in a smaller number of specified courses for the student.

4.**Foreign Language Requirements.** The dissertation committee may require the student to demonstrate proficiency in one modern foreign language with a significant chemical literature, if the committee deems such proficiency requisite to pursuit of the student's dissertation research. The dissertation committee will establish the method of demonstrating foreign language proficiency.

5.**Dissertation.** A dissertation summarizing the results of original research performed by the student under the supervision of a faculty member in the Department is required for the Ph.D. degree. The criterion for acceptance by the Department of a dissertation is that its contents be suitable for publication in a scientific journal. The dissertation must not have been submitted to any other institution prior to its submission to the Chemistry Department at UCI.

6.**Defense of Dissertation.** Upon completion of the dissertation, the student will take an oral examination, open to the public, before a committee consisting of his research supervisor, two additional members of the Chemistry Department, and, when pertinent, a member of another department. The student will be examined on the contents of the dissertation and on topics in branches of chemistry which are related to the subject matter of the dissertation.

7.**Teaching.** The graduate program at Irvine enables all students to participate in some teaching during their graduate studies. A minimum of three quarters of teaching is required of Ph.D. candidates.

Chemistry Faculty

Harold W. Moore, Ph.D. University of Illinois, *Associate Professor of Chemistry and Chairman of the Department*

David A. Brant, Ph.D. University of Wisconsin, *Associate Professor of Chemistry* (on leave 1971-72)

Don L. Bunker, Ph.D. California Institute of Technology, *Professor of Chemistry*

Marjorie C. Caserio, Ph.D. Bryn Mawr College, *Associate Professor of Chemistry*

Donald R. Davis, Ph.D. University of California, Los Angeles, *Assistant Professor of Chemistry*

Robert J. Doedens, Ph.D. University of Wisconsin, *Assistant Professor of Chemistry*

Michael H. Fisch, Ph.D. California Institute of Technology, *Assistant Professor of Chemistry*

Everly B. Fleischer, Ph.D. Yale University, *Professor of Chemistry*

Vincent P. Guinn, Ph.D. Harvard University, *Professor of Chemistry*

Edward K. C. Lee, Ph.D. University of Kansas, *Associate Professor of Chemistry* (on leave 1971-72)

Robert T. McIver, Ph.D. Stanford University, *Assistant Professor of Chemistry*

George E. Miller, D. Phil. Oxford University, *Lecturer in Chemistry and Reactor Supervisor*

Larry E. Overman, Ph.D. University of Wisconsin, *Assistant Professor of Chemistry*

F. S. Rowland, Ph.D. University of Chicago, *Professor of Chemistry*

Robert W. Taft, Ph.D. Ohio State University, *Professor of Chemistry*

Max Wolfsberg, Ph.D. Washington University, *Professor of Chemistry*

Undergraduate Courses in Chemistry

1A-B-C General Chemistry (1-1-1) F, W, S

Lecture, three hours; discussion, one hour; laboratory, four hours. Introduction to the theoretical foundations and practice of modern chemistry. Topics of study: stoichiometry; atomic and molecular structure; properties of gases, liquids, solids, and solutions; chemical equilibrium and thermodynamics; chemical kinetics; periodic properties and descriptive chemistry of the elements. Prerequisites for 1A: high school chemistry, three years of high school mathematics; high school physics is recommended. Prerequisites for 1B and 1C: successful completion of previous courses in the sequence. Concurrent enrollment in calculus will be useful but is not required. Students lacking some prerequisites may be admitted by consent of the Department.

11B-C Honors General Chemistry (1-1) W, S

Lecture, three hours; discussion, one hour; laboratory, four hours. Designed for the student with superior ability and preparation. The format and syllabus follow closely those of Chemistry 1, but topics will be developed more extensively and the laboratory will provide greater opportunity for exercise of individual initiative in design and execution of experiments. Prerequisites: successful completion of previous quarters of General Chemistry and consent of the Department.

51A-B-C Organic Chemistry (1-1-1) F, W, S

Lecture, three hours; discussion, one hour; laboratory, four hours. Development of fundamental concepts relating to carbon compounds with emphasis on structural theory and the nature of chemical bonding, stereochemistry, reaction mechanisms, spectroscopic, physical, and chemical properties of the principal classes of carbon

compounds. The accompanying laboratory course provides experience in modern techniques of organic chemistry, using selected experiments to illustrate the topics introduced in the lectures. Prerequisites for 51A: Chemistry 1A-B-C. Prerequisites for 51B and 51C: successful completion of previous courses in the sequence.

***101A-B Chemistry of Environmental Pollution** (1-1) W, S
Lecture, three hours. The chemistry of air, water, and soil pollution will be examined. The chemical fate of pollutants will be traced from their sources, and remedial alternatives to current pollution patterns will be discussed from a chemical point of view. Prerequisites: Chemistry 1A-B-C and 51A.

131A-B-C Physical Chemistry (1-1-1) F, W, S
Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 1A-B-C, Physics 5A-B, Mathematics 2A-B-C. Prerequisites for 131B-C: successful completion of previous courses in sequence.

131A (1) F
Thermodynamics of pure and mixed systems in the gas and condensed phases. Development of the conditions of chemical and heterogeneous equilibrium.

131B (1) W
Chemical statistics and chemical dynamics. Development of the principles of kinetic molecular theory, molecular thermodynamics, and chemical kinetics.

131C (1) S
Quantum chemistry, spectroscopy, and molecular structure. Development of the principles of chemical bonding, spectroscopy, and molecular structure determination.

150 Quantitative Analysis(1) F
Lecture, three hours; laboratory, six hours. Volumetric, gravimetric, colorimetric, and electrochemical methods are illustrated in experiments which determine the chemical composition of mixtures. Theoretical considerations of analytical chemistry are treated in the lectures, as background both for the laboratory portion of this course and for Instrumental Analysis (Chemistry 151). Prerequisites: Chemistry 1A-B-C.

151 Instrumental Analysis (1) S
Lecture, three hours; laboratory, four hours. Principles and methods of modern instrumental chemical analysis (ultraviolet-visible-infrared absorption spectrophotometry, gas chromatography, radiochemical assay, electrochemistry, fluorometry, magnetic resonance spectroscopy, mass spectroscopy, etc.) are studied. Prerequisites: Chemistry 131A and 150.

152 Physical Chemistry Laboratory (1) W
Laboratory, ten hours. For Chemistry majors and others interested in the observational basis and techniques of physical chemistry. Experiments deal with gases, solutions, chemical kinetics, spectroscopy, and other topics, some of which may be proposed by the student. Prerequisites: Chemistry 131C (may be taken concurrently) and 151.

***160 Qualitative Organic Analysis** (1) S
Lecture, two hours; laboratory, eight hours. Emphasizes modern spectral and chemical methods of identification of organic compounds. Prerequisites: Chemistry 51A-B-C.

170 Radioisotope Techniques (1) W
Lecture, three hours; laboratory, four to six hours. Basic theory and practice of production, separation, and determination of radioactive isotopes with emphasis on particular applications in chemistry and biology. Prerequisite: Chemistry 150. Others may be admitted by consent of the Department.

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*Not offered 1971-72.

180 Undergraduate Research (1) F, W, S
The student wishing to engage in research for credit should arrange with a member of the staff to sponsor and supervise such work. Prerequisite: consent of a faculty sponsor.

Graduate Courses in Chemistry

201 Kinetics and Mechanism of Organic Reactions (1) W
Lecture, three hours. Emphasizes the quantitative aspects of organic chemistry as they apply to mechanistic investigations. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

202 Physical Organic Chemistry (1) S
Lecture, three hours. Covers three broad areas: structure and spectroscopy, stereochemistry and conformational analysis, and molecular orbital theory and bonding. The emphasis and subjects will vary from year to year. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

205 Modern Synthetic Reactions (1) F
Lecture, three hours. Covers recent synthetic developments and techniques in organic synthesis. The emphasis will be on both synthetic application and mechanistic interpretations. Prerequisites: Chemistry 51A-B-C.

211 Chemical Thermodynamics (1) W
Lecture, three hours. A detailed discussion of the fundamental principles of chemical thermodynamics will be undertaken. The thermodynamics of single- and multi-component gas phase and condensed phase systems will be discussed. Prerequisites: Chemistry 131A-B-C.

213 Chemical Kinetics (1) F
Lecture, three hours. Surveys gas phase and organic reaction mechanisms and their relationship to kinetic rate laws; treats the basic theory of elementary reaction rates. A brief presentation of modern cross-sectional kinetics is included. Prerequisites: Chemistry 131A-B-C.

215 Inorganic Chemistry I (1) W
Lecture, three hours. Principles of modern inorganic chemistry with applications to chemical systems of current interest. Major topics include the nature and properties of the chemical bond, stereochemistry of inorganic compounds, the structures, properties, and reactions of coordination and organometallic compounds, and selected topics from the current literature. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

216 Inorganic Chemistry II (1) F
Lecture, three hours. Advanced topics in structural, synthetic, and mechanistic aspects of inorganic chemistry. Emphasis will vary at the discretion of the lecturer. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

230 Molecular Spectroscopy (1) W
Lecture, three hours. Theory and techniques of spectroscopy as used for the study of molecular structures and properties. Infrared, Raman, microwave, and magnetic resonance spectroscopy are covered. Prerequisites: Chemistry 131A-B-C.

231 Quantum Chemistry (1) F
Lecture, 3 hours; discussion, 1 hour. Fundamentals of quantum mechanics will be discussed. The application of quantum mechanics to problems in atomic systems will be considered. Prerequisites: Chemistry 131A-B-C.

232 Statistical Mechanics (1) S
Lecture, three hours; discussion, 1 hour. The fundamental postulates of statistical mechanics will be examined and the formalism of the method developed. Applications to statistical thermodynamic problems of chemical interest, e.g., dilute and real gases, crystals, liquids, solutions, chemical equilibrium, will be considered. Prerequisites: Chemistry 131A-B-C.

233 Nuclear and Radiochemistry (1) W
Lecture, three hours. Brief introductions are presented to nuclear structure, nuclear reactions, nuclear energy, radiochemical analysis, isotope effects, radiation chemistry, hot-atom chemistry, tracer methods, and nuclear processes as chemical probes. Prerequisites: Chemistry 131A-B-C or consent of the Department.

***234 Advanced Chemical Kinetics** (1)
Variable format. In some years it has been identical with the winter course in Gas Kinetics, which is given periodically for a nationwide audience. On other occasions it has been a cluster of lecture series on various modern kinetics topics. Prerequisite: Chemistry 213 or consent of the Department.

235 Molecular Quantum Mechanics (1) S
Lecture, 3 hours; discussion, 1 hour. The application of quantum mechanics to the calculation of molecular properties will be discussed. Attention will be given to the electronic structure of molecules. Prerequisites: Chemistry 231 or equivalent.

***240 Forensic Chemistry** (1)
Lecture, 3 hours. Some of the lectures may be presented by practicing criminalists. The application of chemical techniques to the problems of crime investigation will be discussed. Prerequisites: Chemistry 51A-B-C and Chemistry 131A-B-C or consent of Instructor.

251 Special Topics in Organic Chemistry (1)
Advanced topics in organic chemistry are discussed. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

252 Special Topics in Physical Chemistry (1)
Advanced topics in physical chemistry are discussed. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

253 Special Topics in Inorganic Chemistry (1)
Advanced topics in inorganic chemistry are discussed. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

280 Research (½ to 3) F, W, S
Organic synthesis, reaction kinetics, radiochemistry, nuclear chemistry, photochemistry, theoretical chemistry, physical organic chemistry, inorganic chemistry, physical chemistry of macromolecules. Prerequisite: permission of the Department.

290 Seminar (1) F, W, S
Weekly seminars and discussions on general and varied topics of current interest in chemistry. Prerequisite: graduate standing.

291 Research Seminar (1)
Seminars organized for detailed discussion of research problems of current interest in the Department. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

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*Not offered 1971-72.

DEPARTMENT OF MATHEMATICS

The curriculum in mathematics — from lower-division to graduate courses — is augmented by opportunities for supervised individual study and research, seminars, colloquia, and the mathematics programs at nearby branches of the University of California. It is designed to be compatible with curricular structures at other collegiate institutions in California so as to enable students transferring to UCI to continue their programs of mathematics study.

Undergraduate Program

Undergraduate mathematics courses are of several kinds: (a) courses preparatory to advanced work in mathematics, the exact sciences, and engineering; (b) courses for students of the social sciences; (c) courses for liberal arts students and those planning to enter the teaching field.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements*

One year of calculus (Mathematics 2A-B-C or equivalent); 12 upper-division or graduate courses in mathematics including Mathematics 120A-B-C or equivalent and Mathematics 140A-B-C or equivalent; three additional courses in chemistry, mathematics, physics, or information and computer science; three years of high school study or one year of college study in French, German, or Russian (in extraordinary circumstances a student may satisfy this requirement by passing a special examination administered by the Department of Mathematics); an overall grade point average of 2.3 or higher in mathematics courses.

Graduate Programs

Graduate courses are designed to meet the needs of students doing graduate work in mathematics and in such disciplines as require graduate-level mathematics for their study. Among the fields covered are analysis, algebra, functional analysis, geometry and topology, probability and statistics, ordinary and partial differential equations, and mathematical logic.

In addition to formal courses, there are seminars for advanced study toward the Ph.D. in various fields of mathematics. Topics will vary from year to year. Each seminar is conducted by a staff member specializing in the subject studied. Enrollment will be subject to the approval of the instructor in charge.

Master of Arts in Mathematics

The Master's Degree programs serve a dual purpose: (a) for some they serve as terminal programs of mathematical education; (b) for others they serve as programs leading to study and research aimed at the Doctor of Philosophy degree. However, a candidate lacking a Master's Degree may, upon successful completion of a proper program of study and research, receive the Doctor of Philosophy degree.

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*The requirements for the Bachelor's Degree in Mathematics apply to freshmen entering UCI in 1970-71 and thereafter. All other students are subject only to the requirements in force at UCI at the time in which they became freshmen; however, no students are required to take more than *one year* of a foreign language.

The Master's Degree is offered under Plans I and II. There are no specific course requirements for the Master's Degree. On the other hand, demonstrated competence and knowledge of algebra and analysis are required for this degree. Examinations, written or oral, will be given to determine the relevant preparation of candidates. For Master's candidates, the ability to read the literature of mathematics in one of the foreign languages, French, German, or Russian, is required.

Plan I for the Master's Degree requires the equivalent of the successful completion of at least eight courses (at least five at the graduate level), the writing of an acceptable research dissertation, and the passing of examinations (written or oral) designed to test the competence of the candidate in the fields of algebra and analysis.

Plan II for the Master's Degree requires the equivalent of the successful completion of at least 12 courses (at least eight at the graduate level) and the passing of examinations (written or oral) designed to test the competence of the candidate in the fields of algebra and analysis.

The residence requirement for the Master's Degree consists of full-time registration for three quarters just prior to the granting of the degree. It is possible for a candidate to take leaves of absence between pairs of these three quarters by making formal arrangements with the Graduate Division.

Doctor of Philosophy in Mathematics

The Doctor of Philosophy degree requires successful completion of a program of courses, seminars, and individual study that prepares a candidate for a career in mathematical teaching and research. He is expected to have breadth of knowledge in that he is required to demonstrate advanced knowledge and competence in algebra and analysis. He is expected to have depth of knowledge in that he is required to be profoundly familiar with a well-defined subject in mathematics, e.g., Banach algebras, group theory, operator theory, probability theory, topology, categorical algebra.

There are two general requirements for the Ph.D.: (a) the passing of written and/or oral examinations and (b) the writing and defense of a dissertation embodying creative research that makes a new and valuable contribution to the field of concentration.

Each candidate must demonstrate the ability to read the literature of mathematics in two of the languages, French, German, or Russian.

The examinations for predoctoral students are divided into two sets: those used in determining preparation of the students for admission to candidacy for the Doctor of Philosophy degree; those used to determine successful completion of all requirements for the same degree.

The first set (administered by the Department of Mathematics) may consist of both oral and written examinations. The second set is prescribed and administered by the Graduate Division operating through a committee. This committee, consisting of scholars in the field of concentration and scholars in other fields, decides on admission of students to candidacy and then guides and supervises candidates through their research, study, and writing for the Doctor of Philosophy degree.

Doctoral candidates must be enrolled as full-time students for the six quarters preceding the granting of their degrees.

Mathematics Faculty

Ray A. Kunze, Ph.D. University of Chicago, *Professor of Mathematics and Chairman of the Department*

Frank B. Cannonito, Ph.D. Adelphi University, *Associate Professor of Mathematics and Vice Chairman of the Department*

Takeo Akasaki, Ph.D. University of California, Los Angeles, *Assistant Professor of Mathematics*

Robert L. Chazin, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics* (on leave fall 1971, winter 1972)

Donald A. Darling, Ph.D. California Institute of Technology, *Professor of Mathematics*

Richard A. Denholm, Ed. B. Western Reserve University, *Supervisor of Teacher Education and Lecturer in Mathematics*

William F. Donoghue, Jr., Ph.D. University of Wisconsin, *Professor of Mathematics*

William H. Fellner, M.A. University of California, Berkeley, *Acting Assistant Professor of Mathematics and Medicine*

Mark Finkelstein, Ph.D. Stanford University, *Associate Professor of Mathematics* (on leave, spring 1972)

Bernard R. Gelbaum, Ph.D. Princeton University, *Professor of Mathematics and Associate Dean of School of Physical Sciences*

John M. Grover, Ph.D. University of California, Los Angeles, *Assistant Professor of Mathematics*

John C. Holladay, Ph.D. Yale University, *Professor of Mathematics*

John M. Hosack, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics*

Richard K. Juberg, Ph.D. University of Minnesota, *Associate Professor of Mathematics*

Gerhard K. Kalisch, Ph.D. University of Chicago, *Professor of Mathematics*

Stepan Karamardian, Ph.D. University of California, Berkeley, *Associate Professor of Mathematics and Administration*

Balmohan V. Limaye, Ph.D. University of Rochester, *Assistant Professor of Mathematics*

Eugene Malek, Ph.D. University of Paris (France), *Assistant Professor of Mathematics*

Meinhard E. Mayer, Ph.D. Parhon University (Rumania), *Professor of Mathematics and Physics*

George S. McCarty, Jr., Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics*

Charles M. Naylor, Ph.D. Stanford University, *Assistant Professor of Mathematics*

Robert L. Newcomb, Ph.D. University of California, Santa Barbara, *Assistant Professor of Mathematics and Social Sciences*

David C. Newell, Ph.D. Brandeis University, *Assistant Professor of Mathematics*

Janet L. Palmquist, Ph.D. Brandeis University, *Assistant Professor of Mathematics*

Paul H. Palmquist, Ph.D. University of Chicago, *Assistant Professor of Mathematics*
Bernard Russo, Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics*
William H. Smoke, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics* (on leave)
Noboru Suzuki, Ph.D. Tohoku University, *Associate Professor of Mathematics*
Zenas M. Sykes, Jr., Ph.D. Johns Hopkins University, *Associate Professor of Mathematics*
Edward O. Thorp, Ph.D. University of California, Los Angeles, *Professor of Mathematics* (on leave winter, spring 1972)
Howard G. Tucker, Ph.D. University of California, Berkeley, *Professor of Mathematics*
Robert W. West, Ph.D. University of Michigan, *Associate Professor of Mathematics*
Joel J. Westman, Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics*
Robert J. Whitley, Ph.D. New Mexico State University, *Associate Professor of Mathematics*
James J. Yeh, Ph.D. University of Minnesota, *Professor of Mathematics* (on leave winter, spring 1972)

Lower-Division Courses in Mathematics

1A Review of Precalculus Mathematics F
A rapid survey of precalculus. No credit.

2A-B-C Calculus (1-1-1) F, W, S
An integrated treatment of calculus and analytic geometry in which the subjects of differentation, integration, and power series expansion of functions of a single real variable and several real variables are discussed together with applications of these topics. Prerequisites: two years high school algebra; one year high school geometry; one-half year trigonometry.

3A-B-C Topics in Second Year Calculus (1-1-1) F, W, S
Topics in second year mathematics such as vector analysis, differential equations, linear algebra will be given in self-contained quarter courses. Prerequisites: Mathematics 2A-B-C.

4A-B-C Liberal Arts Mathematics (1-1-1) F, W, S
A course designed to reveal mathematics as a science and an art. Prerequisites: one year high school algebra, one year high school geometry.

4A Structure, arithmetic, and algebra of the real number system; elementary number theory and numberation (1) F

4B Axiomatic method, application to group theory and geometry (1) W

4C Sets, logic, introduction to calculus and applied mathematics (1) S

5A-B-C Mathematics for the Social & Natural Sciences I (1-1-1) F, W, S
Each course in the sequence is a prerequisite for those following. This course deals with probability theory and its applications to models and to statistics. Topics in probability theory include probability models, sampling, product models, conditional probability and independence, binomial distribution, and random variables. Topics in statistics include sampling and sample distributions, estimation, hypothesis testing, and normal approximation to the binomial. The course normally includes enough calculus to deal with the normal distribution and continuous distributions. Prerequisites: two years high school algebra.

6A-B-C Mathematics for the Social & Natural Sciences II (1-1-1) F, W, S
Topics normally include matrix algebra, linear programming, Markov chains, and differential/difference equation models for social science. Prerequisites: Mathematics 5A-B-C or 2A-B-C and consent of instructor.

10A-B-C Topics in Mathematics (1-1-1) F, W, S
A course designed to acquaint the beginning student with some of the ideas of modern mathematics that are independent of the calculus, e.g., graph theory, finite groups, number theory. Each quarter is normally devoted to a different topic, and it is not required that the student enroll for the entire sequence. Prerequisites: Mathematics 2A-B-C or consent of instructor.

11A-B-C Geometry for High School Teachers (1-1-1) F, W, S
An integrated treatment of congruence, line reflections, elliptic geometry, orientability and angle sums, inversions, geometric algebra, hyperbolic geometry — including length distance and area, affine geometry — the line, the plane, the Euclidean plane, pairs of coordinate systems for the affine plane, orientation, separation and order properties of the plane. Prerequisites: Mathematics 2A-B-C or equivalent or Mathematics 4A-B-C.

Upper-Division Courses in Mathematics

101A-B Topics in Mathematics (1-1) W, S
Similar in concept to the 10A-B-C sequence but at a more advanced level. Prerequisites: Mathematics 3A-B-C.

104E Foundations of Arithmetic and Algebra (1-1-1) F, W, S
This course meets the certification requirements for the teaching credential in the State of California. Includes the structure, arithemetic, and algebra of the real number systems. It may not be counted as upper-division credit for the Departmental major in mathematics.

105A-B-C Numerical Analysis (1-1-1) F, W, S
Interpolation, polynomial approximation, numerical differentiation and integration, difference equations, iterative solutions of nonlinear equations. Numerical solutions of linear systems, eigenvalue computations, finite difference methods for solving ordinary differential equations. Difference methods for partial differential equations. Prerequisites: Mathematics 142A-B-C or 143A-B-C or consent of instructor.

110A-B-C Topology (1-1-1) F, W, S
A study of the topology of the real line and Euclidean space and an introduction to metric spaces and general topological spaces. Separation axioms, Urysohn's lemma, connectivity, compactness, Tychonoff theorem, etc. Prerequisites: Mathematics 140A-B-C or consent of instructor.

111A-B-C Foundations of Geometry (1-1-1) F, W, S
An integrated treatment of congruence, line reflections, elliptic geometry, orientability and angle sums, inversions, geometric algebra, hyperbolic geometry — including length distance and area, affine geometry, the line, the plane, the Euclidean plane, pairs of coordinate systems for the affine plane, orientation, separation and order properties of the plane. Bolyai-Lobachevskian geometry. Projective geometry. Prerequisites: Mathematics 140A-B-C or consent of instructor.

112A-B-C Introduction to Differential Geometry (1-1-1) F, W, S
Introduction to classical topics in differential geometry. Subjects to be covered include differential forms, Frenet formulas, frame fields, connection forms, structural equations, Euclidean geometry, mappings of surfaces, integration of forms, shape operators, Gaussian curvature, intrinsic geometry of surfaces in E^3, Riemannian geometry, the Gauss-Bonnet theorem, and the Hodge-DeRham Theorems. Prerequisites: Mathematics 140A-B-C or consent of instructor.

115A-B-C Geometry and the Classical Groups (1-1-1) F, W, S
An investigation of the classical linear groups, their structure and representations. Applications to geometry. Introduction to Lie theory. Prerequisites: Mathematics 140A-B-C or consent of instructor.

120A-B-C Algebra I (1-1-1) F, W, S
Introduction to concepts in algebra with emphasis on linear algebra. Topics to include vector spaces, linear transformations, duality, innerproduct spaces, change of basis, spectral theory, Jordan canonical form, minimal polynomials, Cayley-Hamilton theorem. Prerequisites: Mathematics 140A-B-C or consent of instructor. (Required course for mathematics majors.)

121A-B-C Algebra II (1-1-1) F, W, S
Continuation of 120A-B-C. An introduction to abstract algebra, including elementary group theory, linear and multilinear algebra, and the theory of rings and fields. Prerequisites: Mathematics 120A-B-C or consent of instructor.

122A-B-C Theory of Numbers (1-1-1) F, W, S
Selected topics in the theory of numbers including factorization, congruences — linear, higher degree congruences, congruences with prime moduli, Fermat, Euler and Wilson's Theorems. Primitive roots and indices. Quadratic residues, the Jacobi symbol, law of quadratic reciprocity. Number theoretic functions and distribution of primes, Mobius function, Bertrand's conjecture. Sums of squares, Gaussian integers. Pell's equation, Farey sequences and Hurwitz's theorem. Rational approximations to real numbers. Prerequisites: Mathematics 140A-B-C or consent of instructor.

130A-B-C Probability and Stochastic Processes (1-1-1) F, W, S
An informal introduction to the theory, with applications in the sciences. In the first quarter, topics from probability theory necessary for statistics (131A-B) are covered. Prerequisites: Mathematics 2A-B-C or 6A-B-C or 140A-B-C or consent of instructor.

131A-B-C Mathematical Statistics (1-1-1) F, W, S
An introduction to the theory of statistical inference, including point and interval estimation, hypotheses testing and linear models. Sampling theory. Prerequisites: Mathematics 130A or consent of instructor.

140A-B-C Elementary Analysis I (1-1-1) F, W, S
A rigorous treatment of the calculus, including the real number system, continuous and differentiable functions, and an introduction to the theory of integration. Prerequisites: Mathematics 2A-B-C or consent of instructor. (Required course for mathematics majors.)

141A-B-C Elementary Analysis II* (1-1-1) F, W, S
Continuation of Elementary Analysis I. Prerequisites: Mathematics 140A-B-C or consent of instructor. (Strongly suggested for mathematics majors.)

142A-B-C Ordinary and Partial Differential Equations (1-1-1) F, W, S
An introduction to differential equations for students of mathematics, physics, and engineering. The first quarter is devoted to ordinary differential equations, the last two quarters to partial differential equations and related topics. Prerequisites: Mathematics 140A-B-C or consent of instructor.

143A-B-C Applied Analysis (1-1-1) F, W, S
An introduction to applied mathematics, especially differential equations, for students in engineering and physics. The first quarter is concerned with linear ordinary

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*For 1971-72 only this course will be equivalent to Mathematics 140A-B-C offered in previous years and will satisfy the departmental requirement for the departmental major for students who are not subject to the requirements for the major introduced in 1970-71.

differential equations. Topics from series expansions, complex analysis, Fourier series, and introductory partial differential equations will be covered second quarter. The third quarter is devoted to partial differential equations. Prerequisites: Mathematics 3A-B-C or consent of instructor.

144A-B Introduction to Complex Variables (1-1) W, S
The Cauchy integral formula, the maximum modulus theorem, Taylor and Laurent series, and the residue theorem. Prerequisites: Mathematics 140A-B-C, 3A-B-C, or consent of instructor.

145A-B-C Topics in Analysis (1-1-1) F, W, S
This course will provide a second year in classical analysis for mathematicians, physical scientists, and engineers. Possible topics to be covered include the calculus of variations, potential theory, theory of the Laplace Transform, boundary value problems, and integral equations. Prerequisites: Mathematics 140A-B-C or consent of instructor.

150A-B-C Mathematical Logic and Set Theory (1-1-1) F, W, S
The propositional calculus. First order predicate calculus, consistency, completeness. The choice axiom. Well-ordering. Ordinal and cardinal numbers. Prerequisites: Mathematics 121A-B-C or consent of instructor.

155A-B-C Automata Theory and Recursion Theory (1-1-1) F, W, S
Automata theory — Finite state models, equivalent machines, regular expressions, and Kleene's Theorem. Formal languages, grammars, context-free languages, and related automata. Recursion theory — Turing machines, universal Turing machines; recursive functions, reducibilities, Church's thesis, primitive recursive functions, representations of recursive functions; unsolvability and its applications. Prerequisites: Mathematics 140A-B-C, 121A-B-C, or consent of instructor.

170A-B-C Statistical Methods (1-1-1) F, W, S
A survey of the classical methods of estimation and testing including applications to linear regression and analysis of variance, with examples from the sciences. Designed primarily for research workers in the sciences. Prerequisites: Mathematics 2A-B-C or 5A-B-C and 6A or consent of instructor.

191A-B-C Introduction to the Theory of Games with Applications (1-1-1) F, W, S
The classical von Neumann theory of finite two and n-person games. The theory will be applied to specific games including chess, poker, Go, and blackjack and to economic behavior including the securities markets. Topics from utility theory, optimal strategies, linear programming, and the theory of infinite games will be treated, depending on the interest of the class and the instructor. Prerequisites: Mathematics 140A-B-C or consent of instructor.

199A-B-C Special Studies in Mathematics (1-1-1) F, W, S
For outstanding undergraduate mathematics majors in supervised but independent reading or research of mathematical topics of current interest. Prerequisite: Department approval.

Graduate Courses in Mathematics

210A-B-C Real Analysis (1-1-1) F, W, S
Measure theory, Lebesgue integral, Lp spaces, Radon-Nikodym theorem, differentiation, metric spaces, Banach spaces, Daniell integral. Prerequisites: Mathematics 140A-B-C, or equivalent of these or consent of instructor.

220A-B-C Analytic Function Theory (1-1-1) F, W, S
Complex numbers and their geometry, powers, fractional linear transformations, holomorphic functions, infinite series, elementary functions, complex integration, Taylor's and Laurent's series, analytic continuation, algebraic and elliptic functions, entire functions, normal families. Prerequisites: Mathematics 140A-B-C, 141A-B-C, 110A-B-C, or equivalent of these, or consent of instructor.

221A-B Several Complex Variables (1-1) F, W
Holomorphy domains, Plurisubharmonic functions. Holomorphy envelopes, integral representations. Applications in partial differential equations and quantum field theory. Prerequisites: Mathematics 220A-B-C or equivalent or consent of instructor.

230A-B-C Algebra (1-1-1) F, W, S
Elements of the theories of groups, rings, fields, modules, Galois theory. Modules over principal ideal domains. Artinian, Noetherian, and semisimple rings and modules. Prerequisites: Mathematics 120A-B-C or 121A-B-C or equivalent or consent of instructor.

231A-B-C Group Theory (1-1-1) F, W, S
Introduction to the theory of groups. Groups and homomorphisms, the isomorphism theorems, permutation groups, finite direct products, the Sylow theorems, normal and subnormal theorems, extensions of groups, simple groups, infinite Abelian groups, homological algebra applied to group theory, free groups and free products, presentations of groups. Prerequisites: Mathematics 121A-B-C or equivalent or consent of instructor.

232A-B-C Theory of Finite Groups (1-1-1) F, W, S
Introduction to the theory of finite groups. Representations of groups, character theory, groups of prime power order, solvable and π-solvable groups, fusion, transfer and p-factor groups, theorems of Burnside, Frobenius and Grün, groups of even order, Glauberman-Thompson normal p-complement theorem, Thompson transitivity theorem, Feit-Suzuki theorem, fixed-point-free automorphisms, the Hall-Higman theorem, simple groups of low rank. Prerequisites: Mathematics 231A-B-C or consent of instructor.

234A-B-C Topics in Algebra (1-1-1) F, W, S
Group theory, homological algebra, and other selected topics. Prerequisites: Mathematics 230A-B-C or consent of instructor.

240A-B-C Differential Geometry (1-1-1) F, W, S
Differential manifolds, differential forms, integration, introduction to Lie groups, connections, Riemannian manifolds, curvature and topology, calculus of variations in the large, immersions and imbeddings. Prerequisites: Mathematics 110A-B-C and 141A-B-C or consent of instructor.

241A-B-C Topics in Lie Groups and Lie Algebras (1-1-1) F, W, S
Introduction to Lie theory with emphasis on the structure of semisimple matrix groups and their representations. Prerequisites: linear algebra, point set topology, and basic analysis.

250A-B-C Algebraic Topology (1-1-1) F, W, S
Topics covered will vary with instructor, but will generally be selected from: fundamental group and covering spaces, the homotopy groups, homology and cohomology theory, simplicial and CW complexes. Prerequisites: Mathematics 121A-B-C and 110A-B-C, or equivalent or consent of instructor.

254A-B-C Topics in Topology (1-1-1) F, W, S
A continuation of 250C, topics being selected by the instructor. Cohomology operations, spectral sequences, generalized homology and cohomology theories and their representability, characteristic classes, K-theory, etc. Prerequisite: Mathematics 250A-B-C or consent of instructor.

260A-B-C Functional Analysis (1-1-1) F, W, S
Elements of Banach space theory, operator theory, Banach algebra theory including structure theory of commutative algebras and spectral theory in Hilbert space, von Neumann and analytic function algebras, semi-groups and other topics of interest. Prerequisites: Mathematics 210A-B-C and 220A-B-C or consent of instructor.

261A-B-C Operator Theory (1-1-1) F, W, S
Elements of topological linear spaces, Hilbert spaces, spectral theorems and multiplicity theory, rings of operators, representation of groups and rings. Prerequisites: Mathematics 210A-B-C or 221A-B-C or consent of instructor.

268A-B-C Topics in Functional Analysis (1-1-1) F, W, S
Selected topics such as spectral theory, abstract Harmonic analysis, Banach algebras, operator algebras. Prerequisite: consent of instructor.

270A-B-C Probability (1-1-1) F, W, S
Probability spaces, distributions and characteristic functions. The Kolmogorov-Daniell theorem, the zero-one theorem and the Levy continuity theorem. Strong limit theorems for independent random variables. Limit distributions for sum of independent random variables. Conditional expectation and martingale theory. Stochastic processes. Prerequisites: Mathematics 130A-B-C and 210A-B-C or consent of instructor.

271A-B-C Stochastic Processes (1-1-1) F, W, S
Kolmogorov's extension theorem, processes with independent increments, Wiener and Gaussian processes, function space integrals, spectral representation of stationary processes, semigroups and infinitesimal generators of Markov processes. Prerequisites: Mathematics 210A-B-C or consent of instructor.

272A-B-C Integration in Function Spaces (1-1-1) F, W, S
Brownian motion, Wiener integral, Feynman integral. Applications to partial differential equations. Gaussian processes, integration on Hilbert space. Generalized stochastic process. Prerequisites: Mathematics 271A-B-C or consent of instructor.

273A-B-C Statistical Inference (1-1-1) F, W, S
Fundamental theorems of probability theory that are used in mathematical statistics. Classical theorems of statistical inference from a mathematically rigorous point of view. Statistical decision theory. Prerequisites: Mathematics 210A-B-C or consent of instructor.

274A-B-C Topics in Probability (1-1-1) F, W, S
Selections from repeated independent and dependent trials processes, limit theorems, laws of large numbers, martingales, ergodic theory, Markov processes. Prerequisites: Mathematics 270A-B-C or consent of instructor.

280A-B-C Mathematical Logic (1-1-1) F, W, S
Boolean algebra, latice theory, ultrafilters, propositional and predicate calculi, Lindenbaum algebras, completeness, relational systems and ultraproducts, Los' theorem, elementary equivalence and elementary classes, ultralimits, model completeness, saturated systems, continuous model theory, applications to algebra, nonstandard number theory and analysis. Prerequisites: Mathematics 150A-B-C or consent of instructor.

281A-B-C Axiomatic Set Theory (1-1-1) F, W, S
Introduction to the axiomatic theory of sets. Zermelo-Fraenkel set theory, Von Neumann-Bernays-Gödel set theory, Morse set theory, Gödel-Cohen theory, the consistency of the continuum hypothesis and the axiom of choice, the independence of the continuum hypothesis and the axiom of choice, Easton's theorem, Scott-Solovay Boolean valued models, Takeuti-Ryll-Nardewski characterization of forcing. Prerequisites: Mathematics 150A-B-C or consent of instructor.

295A-B-C Partial Differential Equations (1-1-1) F, W, S
Local and global theory of partial differential equations: analytic, geometric, and functional analytic methods. Prerequisites: Mathematics 210A-B-C or equivalent, or consent of instructor.

299A-B-C Supervised Reading and Research (1-1-1) F, W, S

DEPARTMENT OF PHYSICS

Undergraduate Program

Courses in the Physics Department are designed to meet the needs of many kinds of students, from those students without facility in mathematics whose main interests lie in the humanities or the arts to those students with professional goals in science and engineering. The three lower-division sequences in physics are distinguished by their intended audience, their mathematical prerequisites, and the extent to which they offer preparation for more advanced courses. These aspects of the beginning courses are summarized in the following table.

	Physics 3	Physics 5	Physics 11, 12, 13
Intended Audience	Premedical students, biological sciences majors	Physics, chemistry, and engineering majors	Nonscience majors
Mathematical Prerequisites	Algebra and trigonometry; concurrent enrollment in Math 2 (Calculus) recommended.	Calculus (Mathematics 2A); knowledge of computer programming is recommended	None
Preparation for Advanced Courses	Physics 5C with permission	All upper-division courses in physics	None

Requirements for the Bachelor's Degree

University Requirements: See page 23.

School Requirements: None.

Departmental Requirements

Physics 5A-B-C-D-E; six courses numbered between 110 and 149, two quarters of advanced laboratory (Physics 151-153); Mathematics 2A-B-C, 3A-B-C; three courses from Mathematics 142A-B-C, 143A-B-C, or 144A-B, with 143A-B-C particularly recommended; and 3 additional upper-division courses chosen from the Schools of Physical Sciences, Biological Sciences, or Engineering, or the Department of Information and Computer Science. Alternative requirements will be developed for students with special interests.

Planning a Program of Study

Physics 3 is a one-year course suitable for pre-medical students, students majoring in biological sciences, and nonscience majors. It surveys most of the important branches of physics with strong orientation toward modern physics. Laboratory work accompanies the course. Nonscience majors with some mathematical skill may wish to consider Physics 3 as an alternative to Physics 11, 12, 13.

A student who decides to major in Physics after completing Physics 3 with a grade of A or B may, with the consent of the Department, enroll in Physics 5C. The premedical physics requirement may be met with Physics 3 or with Physics 5A-B-C.

Physics 5 is an intensive five-quarter course for physics, chemistry, engineering, and other students interested in a careful quantitative approach to the subject. Laboratory work accompanies the course. Students expecting to enroll in the entire five-quarter sequence of Physics 5 should enroll in Mathematics 3A concurrent with Physics 5C. Students planning to enroll in only three quarters of Physics 5 need not enroll in Mathematics 3A. The recommended knowledge of computer programming may be gained by enrolling in Information and Computer Science 1, usually in the fall quarter of the freshman year. Biological sciences majors with facility in calculus should consider Physics 5 as an alternative to Physics 3.

Physics courses numbered between 11 and 20 are one-quarter general education courses intended for nonscience majors. The content and format of these courses will vary from year to year. In general, these courses will not include regular laboratory work.

Courses numbered above 110 are for physics majors and other qualified students. This series of courses in the upper-division curriculum is sufficiently broad to provide programs both for the physics major who does not intend to pursue the study of physics beyond the Bachelor's Degree level and for the physics major preparing for a professional career in physics. The physics major with a career goal in medicine, law, teaching, or business, for example, should emphasize the Physics 130 series, which covers most of the important phenomena of physics. The physics major preparing for graduate work in physics should include most of the Physics 111 series in his program. Any major who is so inclined can take more than the minimum two quarters of advanced laboratory work. Able students may begin the Physics 111 series in their sophomore year.

Courses numbered between 110 and 130 emphasize the mathematical and theoretical structures that have unified our understanding of nature. Those numbered between 131 and 149 emphasize particular domains of the structure of matter. Laboratory work is assigned to separate courses, the 151 series.

The programs of transfer students will be decided after individual consultation.

Since many graduate physics departments require a reading knowledge of one foreign language, physics majors planning graduate work should, if possible, study some Russian, German, or French. Introductory courses in biology and chemistry are also recommended options. Every physics major should avoid overspecialization and wisely use his undergraduate years to explore some areas remote from physics.

Sample Programs

A typical course program for physics majors considering the possibility of graduate study in physics or astronomy is shown below. Three of the electives in the senior year may be physics graduate courses.

	FALL	WINTER	SPRING
FRESHMAN	*Math.* 2A *Chem.* 1A *ICS* 1 Elective	*Math.* 2B *Chem.* 1B *Physics* 5A Elective	*Math.* 2C *Chem.* 1C *Physics* 5B Elective
SOPHOMORE	*Math.* 3A *Physics* 5C Elective Elective	*Math.* 3B *Physics* 5D Elective Elective	*Math.* 3C *Physics* 5E Elective Elective
JUNIOR	*Math.* 143A *Physics* 111A *Physics* 130 Elective	*Math.* 143B *Physics* 111B *Physics* 131 Elective	*Math.* 143C *Physics* 112A Physics Elective Elective
SENIOR	*Math.* 144A *Physics* 152 *Physics* 115 Elective	*Math.* 144B Physics Elective *Physics* 116 Elective	Elective *Physics* 151 *Physics* 112B Elective

Physics majors with interests other than graduate work in physics or astronomy need not take as many physics courses as indicated above. As a guide to preparing a more suitable program, the department makes the following suggestions.

The course program of physics majors considering the possibility of graduate school in engineering should contain at least the following courses:

Physics 111A, 111B, 112A, 112B and three to six engineering courses.

The course program of physics majors considering graduate work in chemistry, biology, or various interdisciplinary areas should contain:

Physics 111A, 112A-B, 115, 130, 131; Chemistry 51A-B-C; and Biology 101A-B-C.

The course program of physics majors considering a teaching career in the public schools or the community colleges should contain at least:

Physics 111A, 112A-B, 130, 131; Education 171 and either 170, 171, or 175; and additional preparation in some area of science or mathematics. Courses from the Physics 11...16 sequence may be appropriate.

The course program of physics majors considering graduate work in the history of science should contain:

Physics 111A-B, 112A-B, and 130, 131; History 29A-B-C or 30A-B-C; 184, 185. Courses from the Physics 11...16 sequence may be appropriate.

Graduate Programs

The Department offers the M.A. and the Ph.D. degrees in physics, the first in recognition of demonstrated knowledge of the basic facts and theories of physics, the second primarily in recognition of demonstrated capacity for independent research.

All new graduate students take an entrance examination shortly before the beginning of the fall quarter. This examination is not "pass" or "not pass". It serves only to help the student and his advisor decide on the best program of study.

Complementing the formal courses, the Department offers regular colloquia and informal seminars. The graduate student is a member of an intellectual community and is expected to participate fully in these Department activities. In addition to the regular research seminars in solid state, high energy, and plasma physics, a teaching seminar meets once each week for the purpose of exploring techniques of instruction and improving graduate student teaching performances. This seminar introduces teaching assistants to the instructional program of this and related departments and gives students an opportunity by means of video-tape to observe and criticize their own teaching methods.

About 60 students of physics will be enrolled in 1971-1972. Active programs of research are underway in high-energy physics, solid state physics, low temperature physics, plasma physics, mathematical physics, and astrophysics.

Sources of support available to graduate students include teaching assistantships, research assistantships, fellowships, and traineeships. For students admitted with financial aid, continuing support in later years is normal.

Students planning to pursue graduate work in physics should obtain a copy of the booklet *Physics* from the Physics Department.

Master of Arts in Physics

The requirements for the M.A. degree are: (1) three quarters of residence; and (2) mastery of graduate course material, which may be demonstrated either (2a) by passing, with an average grade of B or better, a minimum of nine graduate courses numbered between 200 and 259 and a written comprehensive examination, or (2b) by passing the Ph.D. qualifying examination. Under special circumstances, a research project and thesis may be accepted in lieu of proficiency in some of the graduate course material. There is no foreign language requirement for the M.A. degree.

A typical program in preparation for the written examination for the M.A. degree would consist of twelve courses:

Fall Quarter

211 (Classical Mech.)
212A (Math. Physics)
215A (Quantum Mech.)
214A (Stat. Physics)

Winter Quarter

213A (Electromag. Theory)
212B (Math. Physics)
215B (Quantum Mech.)
214B (Stat. Physics)

Spring Quarter

213B (Electromag. Theory)
Elective
Elective
Elective

Doctor of Philosophy in Physics

The principal requirements for the Ph.D. degree are six quarters of residence, passage of a written and an oral examination, and successful completion and defense of a dissertation reporting results of original research. In addition, the Ph.D. candidate must complete moderate graduate course requirements. There is no foreign language requirement for the Ph.D. degree.

1.**Residence.** Up to three of the six required quarters of residence may be waived for students who have had graduate work at another institution.

2.**Course Requirements.** The student is required to exhibit mastery of the basic sequences, Mathematical Physics; Classical Mechanics and Electromagnetic Theory, Quantum Mechanics and Relativistic Quantum Mechanics. In addition, nine graduate level quarter courses (e.g. three three-course sequences) other than the basic sequences are required. These courses must be passed with an average grade of B or better.

3.**Qualifying Examination.** For advancement to Ph.D. candidacy, a student must pass a qualifying examination consisting of a written part and two oral parts. The written part covers a broad range of fundamentals of physics at the advanced undergraduate and graduate levels. The first part of the oral exam will be administered shortly after the written examination. All members of the first oral committee will be faculty from the Physics Department. The second part of the oral examination will be taken approximately one year after successful completion of the written exam and the first oral. The committee that administers the second oral examination will contain one or two faculty members from outside the Physics Department. The second oral will cover principally material related to the broad and general features of the student's thesis area. The written portion of the qualifying examination will generally be given once each year, in September, just prior to the start of classes. The examination may be taken by some students after one year of graduate study. A second attempt will be permitted if the first is not successful. A third attempt will be permitted only in extraordinary circumstances.

4.**Dissertation.** A dissertation summarizing the results of original research performed by the student under the supervision of a faculty member in the Department will be required for the Ph.D. degree. The criterion for the acceptability of a dissertation by the Department is that it be suitable for publication in a scientific journal. The dissertation must not have been submitted to any other institution prior to its submission to the Physics Department at UCI.

5. **Defense of Dissertation.** Upon completion of the dissertation, the student will take an oral examination, open to the public, before his doctoral committee.

6. **Suggested Course Sequences.** Typical programs for the first two years designed to prepare the student for Ph.D. qualification and provide him with the foundation necessary for understanding and participating in modern research might include:

First Year:
211 (Classical Mechanics)
213A-B (Electromagnetic Theory)
212A-B-C (Mathematical Physics)
215A-B (Quantum Mechanics)
215C (Relativistic Quantum Mechanics)

In the second year of graduate study, the student may begin to take courses that will provide a broad background for his thesis area. The following sequences represent a typical second-year program:

For the student with an interest in solid state physics:
214A-B (Statistical Physics)
214C (Many Body Theory)
235A (Advanced Quantum Mechanics)
232A-B (Group Theory)
218A-B-C (Plasma Physics, Low Temperature Physics, Solids)

For the student with an interest in elementary particle physics:
235A-B (Advanced Quantum Mechanics)
232B (Group Theory)
217A-B-C (Elementary Particle Physics, Nuclei, Astrophysics)
214A-B (Statistical Physics)
214C (Many Body Theory) or
218C (Solids)

For the student with an interest in plasma physics:
214A-B (Statistical Physics)
214C (Many Body Theory)
217A-B-C (Elementary Particle Physics, Nuclei, Astrophysics)
218A-C (Plasmas, Solids)
Elective

Physics Faculty

Alexei A. Maradudin, Ph.D. University of Bristol, *Professor of Physics and Chairman of the Department*
Myron Bander, Ph.D. Columbia University, *Associate Professor of Physics*
Alfred M. Bork, Ph.D. Brown University, *Professor of Physics and Information and Computer Science*
Ronnie R. Burns, Ph.D. Columbia University, *Assistant Professor of Physics*
Paul E. Condon, Ph.D. Princeton University, *Associate Professor of Physics and Director, Batch Computer Facility*
Philip W. Coulter, Ph.D. Stanford University, *Assistant Professor of Physics*
Allan R. Evans, Ph.D. Cornell University, *Assistant Professor of Physics*

William R. Kropp, Ph.D. Case Institute of Technology, *Assistant Professor of Physics*
Mark A. Mandelkern, Ph.D. University of California, Berkeley, *Assistant Professor of Physics*
Meinhard E. Mayer, Ph.D. Parhon University (Rumania), *Professor of Physics and Mathematics*
Douglas L. Mills, Ph.D. University of California, Berkeley, *Associate Professor of Physics*
Michael M. Moe, Ph.D. Case Institute of Technology, *Assistant Professor of Physics*
William H. Parker, Ph.D. University of Pennsylvania, *Associate Professor of Physics and Vice Chairman of the Department*
John R. Pellam, Ph.D. Massachusetts Institute of Technology, *Professor of Physics*
Frederick Reines, Ph.D. New York University, *Professor of Physics and Dean of Physical Sciences*
George F. Reiter, Ph.D. Stanford University, *Assistant Professor of Physics*
Nathan Rynn, Ph.D. Stanford University, *Professor of Physics*
Jonas Schultz, Ph.D. Columbia University, *Professor of Physics*
Gordon L. Shaw, Ph.D. Cornell University, *Professor of Physics* (on leave winter, spring 1972)
Virginia L. Trimble, Ph.D. California Institute of Technology, *Assistant Professor of Physics*
Sukekatsu Ushioda, Ph.D. University of Pennsylvania, *Assistant Professor of Physics*
Gerard Van Hoven, Ph.D. Stanford University, *Assistant Professor of Physics*
Richard F. Wallis, Ph.D. Catholic University of America, *Professor of Physics*

Lower-Division Courses in Physics

3A Basic Physics I (1) F
Survey of physical theory and nature; studies of motion; Newtonian mechanics; the solar system. Laboratory. Facility with trigonometry and algebra is assumed. Calculus will be used. Mathematics 2A is strongly recommended but not required. (Laboratory work may be waived by consent of instructor for non-science majors.)

3B Basic Physics II (1) W
Electricity and magnetism; radiation and waves; optics; heat phenomena. Laboratory. Prerequisite: Physics 3A.

3C Basic Physics III (1) S
Twentieth-century physics; relativity; quantum ideas; atomic and nuclear physics. Laboratory. Prerequisite: Physics 3B.

5A Fundamental Physics I (1) W
Newtonian mechanics. Laboratory. Facility in calculus is assumed. Knowledge of computer programming is recommended. Corequisite: Mathematics 2B. (Laboratory work may be waived by consent of instructor for non-science majors.)

5B Fundamental Physics II (1) S
Wave phenomena; relativity. Laboratory. Prerequisite: Physics 5A. Corequisite: Mathematics 2C.

5C Fundamental Physics III (1) F
Electrostatics; magnetostatics; currents and fields; circuit elements; Maxwell's equations. Laboratory. Prerequisites: Mathematics 2A-B-C, Physics 5B.

5D Fundamental Physics IV (1) W
Quantum theory; atoms and nuclei. Laboratory. Prerequisite: Physics 5C. Corequisite: Mathematics 3B.

5E Fundamental Physics V (1) S
Statistical physics; thermal phenomena. Laboratory. Prerequisite: Physics 5C. Corequisite: Mathematics 3C.

11 Topics in Physics I "Super-Cold" (1) S
Superfluidity and other phenomena near absolute zero. No prerequisites.

12 Topics in Physics II "Newton" (1) W
The origins of modern science as seen in Newton's pioneering work in mechanics. Emphasis on historical, philosophical, and sociological developments. Directed particularly toward students in the humanities, social sciences, and fine arts. High school geometry required.

13 Topics in Physics III "Physics of the Environment" (1) W
Physics 13 will attempt to help students understand the problems of the environment by emphasizing the physical principles on which our technological society is based. It will explore the physicist's view of earth and man's activities as a thermodynamic system, restricting itself to those aspects of the environmental crisis which can be understood on a quantitative, scientific basis.

14 Topics in Physics IV "Physics for the Artist" (1) F
An introduction to physical phenomena through demonstrations, discussion, and individual experimentation. Open laboratory-studio investigations of techniques for producing motion, light imagery, and physical interaction with the observer. Enrollment limited to 20-25 students. Preference given to those most willing and able to produce experimental works of art.

15 Topics in Physics V "Astronomy-Astrophysics" (1) F
A subject of general interest from the field of astronomy-astrophysics will be selected to serve as the focal point of a general discussion of astronomical phenomena and theory. The discussion will be at a level accessible to students with only high school mathematics.

16 Topics in Physics VI (1) S
Subject to be announced.

Upper-Division Courses in Physics

111A-B Classical Mechanics (1-1) F, W
Mechanics of particles through Lagrangian and Hamiltonian methods; rigid bodies; relativity; coupled systems. Prerequisite: Physics 5D or consent of instructor.

112A Electromagnetic Theory (1) S
Electrostatics; magnetostatics; properties of matter. Prerequisite: Physics 5C. Corequisite: Mathematics 3.

112B Electromagnetic Theory (1) F
Maxwell's equations; relativity; radiation; optics. Prerequisite: Physics 112A.

115 Statistical Physics (1) W
Microscopic theory of temperature, heat, and entropy; kinetic theory; multicomponent systems; quantum statistics. Prerequisites: Physics 5E, Mathematics 3C.

116 Thermodynamics (1) S
Macroscopic theory of temperature, heat, and entropy; mathematical relationships of thermodynamics; heat engines; phase transitions. Prerequisites: Physics 5E, Mathematics 3C.

130 Quantum Mechanics (1) F
Time-independent and time-dependent Schrödinger equation; one-dimensional problems; some theorems of quantum mechanics; central-field problem; Legendre functions. Prerequisites: Physics 5D, Mathematics 3C.

131 Atomic Physics (1) W
Early quantum results; black-body radiation; the hydrogen atom; atomic structure and atomic spectra; fine and hyperfine structure; Zeeman effect; transitions and selection rules. Prerequisite: Physics 130.

132 Nuclear Physics (1) S
Nucleons and nuclear structure; radioactivity; neutron-proton scattering; the deuteron; nuclear reactions. Prerequisite: Physics 130.

133 Solid State Physics (1) S
Phenomena of solids and their interpretation in terms of quantum theory. Prerequisites: Physics 5D-E.

134 Astrophysics (1) W
Stars: their structure, energy sources, classification, and evolution; solar activity and the solar wind; galaxies; quasars and pulsars; cosmology. Prerequisites: Physics 5D-E.

135 Plasma Physics (1) F
Ionization and discharge mechanisms; microscopic motions and kinetic equations; macroscopic fluid theories; electrodynamics of plasma; wave propagation; examples of laboratory and cosmic phenomena. Prerequisites: Physics 5D-E.

136 Elementary Particles (1) W
Introduction to experimental techniques and theoretical concepts of high-energy phenomena: accelerators and detectors; classification of particles and their interactions; determination of particle properties; symmetries and mass multiplets; production and decay mechanisms. Prerequisite: Physics 130.

141 Modern Optics (1) S
Interaction of radiation with matter; lasers; non-linear optics; optical properties of solids; absorption and scattering of light; modern spectroscopic techniques. Prerequisites: Physics 112B and 130.

150 Electronics (1) F
Applications of modern semiconductor devices to instrumentation common in physics laboratories. Subject matter will include characteristics of semiconductor devices, integrated circuits, common analog and digital circuits. Lecture and laboratory. Prerequisite: Physics 5E or consent of instructor.

151-152-153 Advanced Laboratory I, II, III (1-1-1) F, W, S
Experiments in atomic, nuclear, and solid state physics, including the Zeeman effect, electron spin resonance, nuclear magnetic resonance, optical spectroscopy, and x-ray diffraction. Prerequisites: Physics 5D-E or consent of instructor. Physics 130-131-132 recommended but not required.

160 Group Theory for Physical Science Students (1) S
A short introduction to abstract group theory and group representations. Emphasis will be on the application of symmetry principles to understand various physical phenomena taken from mechanics, atomic spectroscopy, solid state and molecular physics.

190 Contemporary Ideas in Physics (1) F
Intensive exploration of some contemporary ideas in physics, with the specific topics to be determined by the interests of the enrolled students. Course is an experiment in self-motivated learning. Open to lower-division students with consent of instructor.

195 Undergraduate Research (1)
Open to seniors and occasionally to juniors with consent of Department.

199 Readings on Special Topics (1)
With consent of Department.

Graduate Courses in Physics

211 Classical Mechanics (1) F
Variational principles, Lagrange's equations; applications to two body problems, small oscillation theory and other phenomena. Hamilton's equation, Hamilton-Jacobi theory.

212A-B-C Mathematical Physics (1-1-1) F, W, S
Ordinary differential and partial differential equations; complex variables and special functions; matrices, eigenvalues, and eigenvectors; numerical methods; perturbation theory; integral equations; calculus of variations, elements of group theory.

213A-B Electromagnetic Theory (1-1) W, S
Electrostatics of conductors and dielectrics; magnetostatics; relativity; classical electron theory; electromagnetic fields in the vacuum and in matter; retardation; radiation and absorption; dispersion; propagation of light; diffraction; geometric optics; theories of the electric and magnetic properties of materials; scattering.

214A-B Statistical Physics (1-1) F, W
Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics; ensemble theory, ideal and imperfect gases; thermodynamic properties of solids; cooperative phenomena; phase transitions of first and second order; fluctuations.

214C Many Body Theory (1) S
The Green's function approach to the theory of many body systems at finite temperatures will be discussed. The techniques of diagrammatic perturbation theory will be introduced and applied to a few specific problems to illustrate the methods.

215A-B Quantum Mechanics (1-1) F, W
Foundations of quantum theory; Dirac notation, basic operators and their eigenstates; perturbation theory; variational method; spin; Clebsch-Gordon coefficients; structure of atomic systems; scattering theory; formal collision theory; semi-classical radiation theory.

215C Relativistic Quantum Mechanics (1) S
Quantization of the electromagnetic field, relativistic quantum mechanics, second quantization of many body systems.

217A Particles (1) F
An advanced survey of high energy phenomenology dealing with elementary particle quantum numbers and how they are determined, isotopic and unitary spin multiplets, symmetries (e.g., parity, charge conjugation, and time reversal), S-matrix concepts, production and decay mechanisms, and indications of current trends in theory.

217B Nuclei (1) W
Topics will be selected from: the two-body problem, low energy nucleon-nucleon scattering, structure of light nuclei, nuclear reactions and resonances, models of complex nuclei, theories of the fission process, nuclear shapes and deformations, and alpha, beta, and gamma emission processes.

217C Astrophysics (1) S
Stellar structure and evolution; formation of the elements; supernova; pulsars; quasars; origin of cosmic rays.

218A Plasma Physics (1) F
Orbit theory, hydromagnetics, plasma waves, applications to astrophysics and controlled fusion.

218B Low Temperature Physics (1) W
Possible topics include: properties of superfluid helium, and phenomenological theories of superfluid helium, phenomenology of the superconduction state, discussion of experimental methods in low temperature physics.

218C Solids (1) S
Possible topics include: crystal properties, lattice dynamics of solids, electronic band structure of solids, theories of metals and semiconductors, magnetism and superconductivity, with special emphasis on elementary excitations in solids.

232A-B Applications of Group Theory (1-1) W, S
The role of symmetry in physical problems. First quarter examines finite groups, second quarter continuous groups. 232B can be taken without 232A. Abstract group theory and theory of group representations. Perturbation theory, selection rules, crystal tensors, molecular vibrations, Jahn-Teller theorem, directed valence, time reversal symmetry, double groups, crystal field splittings of atomic levels. Continuous groups and applications to particle physics. Full rotation group, Clebsch-Gordan coefficients, the Wigner-Eckart theorem, Racah coefficients, the Lorentz group, unitary groups.

***235A-B Advanced Quantum Mechanics** (1-1) F, W
First quarter: Lagrangian formalism, second quantization, interacting fields, perturbation theory.
Second quarter: Feynman graph techniques, renormalization, symmetries, PCT theorem, connection between spin and statistics.

237A-B-C Elementary Particle Theory (1-1-1) F, W, S

238A-B-C Solid State Theory (1-1-1) F, W, S
Bonding in solids; crystal symmetry and group theory; elastic properties of crystals; lattice vibrations, interaction of radiation with matter; cohesion of solids; the electron gas; electron energy bands in solids; ferromagnetism; transport theory; semiconductors and superconductors; many-body perturbation theory in solid state physics.

***239A-B-C Plasma Physics** (1-1-1) F, W, S
The properties of plasmas, with major emphasis on fully ionized gases. Introduction to modern theoretical treatments. Applications to problems such as controlled thermonuclear fusion, propulsion, energy conversion, and the space sciences.

Special Topics in Physics (260-279)

These courses are designed to acquaint students with the basic concepts and methods underlying current research activity in selected branches of physics.

260A-B-C Topics in Solid State Physics (1-1-1) F, W, S
This course is a seminar designed to acquaint students with recent advances in solid state physics research. Lecturers will be drawn from the Physics Department (both faculty and graduate students), other UCI departments, and other institutions. May be repeated for credit. Prerequisite: consent of instructor.

261A-B-C Advanced Plasma Seminar (1-1-1) F, W, S
Advanced topics in plasma physics including wave propagation, nonlinear effects, kinetic theory and turbulence, investigation of stability problems transport coefficients, containment. Applications to controlled fusion and to astrophysics. Students will do much of the work. Prerequisite: Physics 225 or equivalent.

***262A-B-C Topics in Modern Astrophysics** (1-1-1) F, W, S

263A-B-C High Energy Seminar (1-1-1) F, W, S
Discussion of advanced topics and reports of current research results in theoretical and experimental high energy physics. May be repeated for credit. Prerequisite: consent of instructor.

***266A-B-C Advanced Mathematical Methods** (1-1-1) F, W, S
The course will go beyond the standard subjects now taught to physicists, thus trying to introduce future theorists to the language and methods of contemporary (post-1950) mathematics. Prerequisites are the standard Mathematical Physics courses and a willingness to participate actively (e.g., giving talks in seminars).

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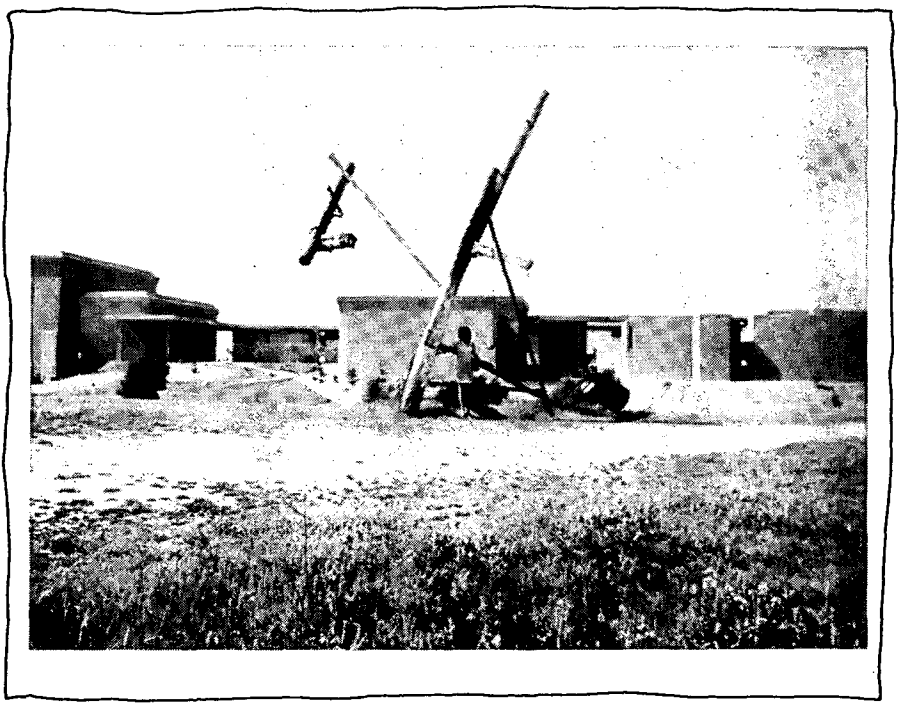
*Not offered 1971-72.

tures mainly given by students. Course can repeatedly be taken for credit. Prerequisite: consent of instructor.

295 Experimental Research (1 to 3)
With the approval of a faculty member who will guide his work, a student may pursue a research program in experimental physics. Typical areas include: low temperature physics, plasma physics, spectroscopy, solid state physics, and elementary particle physics.

296 Theoretical Research (1 to 3)
With the approval of a faculty member who will guide his work, a student may pursue a research program in theoretical physics. Typical areas include: solid state physics, low temperature physics, plasma physics, and elementary particle physics.

299 Reading of Special Topics (1)
With special consent from a faculty member who will agree to supervise his program, a student may receive course credit for individual study of some area of physics.



Betty wanted her picture taken with this sculpture

School of Social Sciences

A. Kimball Romney
Dean

Undergraduate and graduate education in the School of Social Sciences at UCI involve participation in an experiment. The School includes the traditional subject areas of anthropology, economics, geography, political science, psychology, and sociology. However, the program, faculty, and students differ substantially from conventional counterparts elsewhere. The specific details of the differences are indicated below. The details are elaborations of a commitment on the part of the faculty and students to a modern social science. This commitment leads to educational programs with a triple emphasis.

First, they are built upon systematic empirical observation and quantitative analysis of human behavior. Thus, social science students must become familiar with the mathematical, computational, and statistical tools underlying modern social science. The availability of high-speed electronic computers, the development of mathematics oriented toward the problems of the social sciences, and the refinement of techniques for sampling, observing, and modifying human behavior have contributed major new elements to social science.

Second, many of the most interesting questions in the study of human behavior cannot be fixed within the traditional disciplinary boundaries of anthropology, economics, geography, political science, psychology, and sociology. Some of the new and evolving areas which cross these orthodox disciplinary boundaries are political economy, geo-psychology, ethno-sociology, and psycholinguistics.

Third, important new problems confront society; and social scientists have a responsibility to help solve these problems. A rapidly changing technology, population explosion, urban concentration, the thrust of once underdeveloped societies, the strains of race relations, and the combined efforts of men and machines in problem solving are only a few of the problems which confront today's social scientists.

To confront these and other contemporary problems, training in the social sciences must emphasize the basic analytical tools and the processes by which knowledge of human behavior is gained. Such training must also emphasize the exploration of the relations among the social sciences and between the social sciences and other disciplines.

At UCI, education in the social sciences is built upon the assumption that students play an active role in the entire educational process. To facilitate education, various resources are provided — students, faculty, courses, programmed instruction, library, community, lectures, seminars, laboratories, re-

search aids, reading lists, discussion groups, and examinations. The administration provides routine housekeeping services. The faculty provides succor, advice, and occasional wisdom. Students, individually and collectively, make major contributions to the learning process — by participating in regular seminars, proposing new educational materials, developing new programs, and by systematic self-directed study. The programs described here represent a careful effort on the part of the faculty to define a modern approach to social science. They are not sanctified by tradition, authority, or pride. From time to time the faculty expects to propose modifications in the programs. It welcomes similar proposals from students, both to meet the educational needs of individual students and to improve the quality and relevance of the general program.

Students from other schools are encouraged to take courses and talk to faculty within the School of Social Sciences. In addition to the introductory courses, many of the special topics courses are open to students without previous work in social science. These courses are described generally below.

Degrees Offered in the School

Political Science . . . . . Ph.D.
Psychology . . . . . Ph.D.
Social Sciences . . . . . B.A., Ph.D.

Honors at graduation, e.g. *cum laude, magna cum laude,* or *summa cum laude* are awarded on the basis of grade point average.

At the end of each academic school year, the School also designates undergraduate majors as Outstanding Scholars and Honor Scholars.

In order to qualify as an Outstanding Scholar in the School, a student must have completed at least seven graded courses during the school year and be one of the top ten students in the School in terms of grade point average.

Honor Scholars are students who have completed at least seven graded courses during the year, and rank in the top ten percent of the students in the School in terms of grade point average.

Undergraduate Programs

Requirements for the Bachelor's Degree in Social Science*

The basic undergraduate degree program in the School of Social Sciences is a program in social science, and all students must fulfill the requirements for that degree. A student qualifies for a degree in social science by exhibiting:

A. A basic understanding of important fields outside the social sciences. (See page 24 under University Requirements.) The normal program for majors

*Students who were in residence prior to July 1, 1968, and who complete their degree requirements prior to July 1, 1972, have the option of following the old degree requirements. For a discussion of those requirements, see the 1967-68 catalogue.

in the School satisfies *part* of the 6-3-3 breadth requirement (six courses in the School of Physical Sciences) through the School's mathematics requirement.

B. Familiarity with the mathematical, computational, and statistical tools underlying modern social science. Normally, this requirement is met by passing six courses in mathematics (Mathematics 5A-B-C, 6A-B-C); one course in computer science (Information and Computer Science 1); and two courses in advanced mathematics, statistics, or mathematical social science. Students who wish to do so may substitute Mathematics 2A-B-C, 3A-B-C for the first six courses in mathematics, provided they subsequently complete at least two quarters of work in probability and statistics. See the section on "Mathematics and Social Science" below.

C. An understanding of the fundamental concepts, analytical tools, and methods of social science. Normally, this requirement is met by taking Social Science 1 (a one-quarter course) and two other courses in social science numbered with *one-digit* course numbers.

D. An understanding of important advanced areas in social science. Normally, the requirement is met by passing satisfactorily six upper-division courses in the School of Social Sciences.

E. Satisfactory completion of a senior project. The senior project is an individually designed year-long educational program approved for the individual student by a faculty member. Normally, it is a three-course program.

A student who has qualified for a Bachelor's Degree in Social Sciences and wishes to receive a Social Sciences B.A. Degree with a concentration in one of the sub-fields (e.g., Anthropology, Economics, Geography, Political Science, Psychology, or Sociology) may do so, if he, *in addition*, passes a general examination in that field. Ordinarily the examination will be the Graduate Record Examination Advanced Test.

Planning a Program of Study

The requirements above are specified in the form of knowledge gained rather than specific courses taken, and the School encourages students to satisfy the requirements by examination. Some students may find it helpful to consider the following typical course program, so long as it is clearly recognized that *it is neither prescribed nor particularly suggested.*

	FALL	WINTER	SPRING
FRESHMAN	Soc. Sci. 1 Math. 5A Breadth requirement* Breadth requirement*	Soc. Sci. 2 Math. 5B Breadth requirement* Breadth requirement*	Soc. Sci. 4 Math. 5C Breadth requirement* Breadth requirement*

*See page 24.

SOPHOMORE	Soc. Sci. 10R Math. 6A ICS 1 Elective	Soc. Sci. 10G Math. 6B Elective Elective	Soc. Sci. 10X Math. 6C Elective Elective
JUNIOR	Upper Div. Course Upper Div. Course Math. 170A Elective	Upper Div. Course Upper Div. Course Math. 170B Elective	Upper Div. Course Upper Div. Course Elective Elective
SENIOR	Soc. Sci. 190U Elective Elective Elective	Soc. Sci. 190V Elective Elective Elective	Soc. Sci. 190W Elective Elective Elective

Transfer Students

Freshmen and Sophomores: Students transferring to UCI as freshmen or sophomores will fulfill the regular requirements of the four-year program either at UCI or through transfer of credit for comparable work elsewhere.

Juniors: Junior transfers with good records at other accredited colleges and universities will normally be presumed to have satisfied the freshman and sophomore requirements for the social science curriculum. Students anticipating transfer to UCI in their junior year, however, should attempt to plan their program so as to anticipate the special requirements of the program. Every effort will be made to accommodate individual variation in background, provided the student is prepared to commit himself to intensive work in areas of deficiency. Normally, the typical two-year program is simply the last two years of the regular four-year program, except that students who have not satisfied the freshman and sophomore mathematics requirements in the School must do so before graduation (see the section on "Mathematics and Social Science " below).

Seniors: Students wishing to graduate with a degree in the School by transferring in their senior year should plan their work carefully to ensure that the requirements can be met in *one year of residence.* In general, differences between the program at UCI and programs elsewhere *make such transfers difficult.*

Mathematics and Social Science

Competence in basic mathematics is a necessary skill for a modern social scientist. All students are expected to have competence in intermediate algebra on entrance.

The requirements stem from the nature of modern social science. To an increasing extent, the concepts and terms of mathematics, statistics, and computers are an important part of the social scientist's vocabulary. Basic knowledge of these tools is necessary to an understanding of current literature in these fields, to the analysis of data, and to an intelligent use of models in social science.

Each candidate for a degree in the School of Social Sciences is expected to have knowledge of probability theory, matrix algebra, calculus, difference and differential equations, mathematical statistics, and computing. Normally, this knowledge is gained by pursuing a program of nine courses in mathematics, statistics, computing, and mathematical social science. The first seven courses normally are:

Mathematics 5A: Finite Probability
Mathematics 5B: Differential and Integral Calculus
Mathematics 5C: Continuous Probability
Mathematics 6A: Linear Algebra
Mathematics 6B: Differential Equations
Mathematics 6C: Numerical Methods
Information and Computer Science 1: Digital Computing

To complete the requirement, a student normally chooses two courses from an approved list of courses in mathematics, computing, or mathematical social science.

Students who wish to do so may substitute the knowledge represented by Mathematics 2A-B-C and 3A-B-C for Mathematics 5A-B-C and 6A-B-C. However, they will then be expected to complete at least two quarters of work in probability and statistics.

Students entering as juniors (or graduate students) without previous college mathematics are normally enrolled in Mathematics 5A-B-C and Information and Computer Science 1 during their first year at UCI. Such students ordinarily enroll in Mathematics 6A-B-C and the two additional courses during their second year. An undergraduate transfer student without previous college mathematics will normally need two regular school years of work at UCI to complete the graduation requirement of the School.

Graduate Programs

The School offers instruction leading to the Ph.D. degree. The degree programs are restricted to full-time students and emphasize preparation for research and academic careers in the disciplines involved.

In recent years it has become increasingly clear that the traditional boundaries among anthropology, economics, geography, political science, psychology, and sociology are not always the most convenient boundaries for the research and teaching undertaken by social scientists. For instance, those social scientists focusing on such problems as organizations, choice, conflict, urban affairs, or public policy analysis are likely to find such boundaries irrelevant. This problem has long been signalled by the existence at major universities of such dual-title graduate programs as those in political economy and social psychology. There would seem to be no purpose, however, in multiplying and recombining these titles endlessly. Therefore, the School concentrates its graduate training in a program leading to the Ph.D. in Social Sciences. This program does not pretend that there is a single fixed body of knowledge that all social scientists must master, nor will it serve as a cover for any particular methodological orthodoxy.

Rather, it is designed to allow each graduate student to work out for himself, in close conjunction with at least three members of the faculty, a course of study resulting in the mastery of a coherent body of empirical and theoretical knowledge which can serve as the basis for further creative and fruitful teaching and research. Depending on the student's interests, such a program may range quite widely across disciplines or resemble the traditional one discipline plus outside field type of arrangement found at most universities. The faculty envisions a student's Ph.D. program to be of approximately three to four years duration. The student will devote the first year to the explorations and preparation necessary to defining and mastering a coherent field of study. He will continue this preparation into the second year, during the course of which he will also submit a dissertation proposal. The third year will normally be devoted to dissertation research and writing. In some instances, of course, pre-dissertation work will require more than two years, and especially those dissertations demanding extensive field research may require more than one year to complete. In addition, all students will be expected to acquire mathematical and language tools appropriate to their studies. Teaching experience is required of all graduate students for the Ph.D. The requirement is normally fulfilled by the equivalent of 50 per cent time as a Teaching Assistant for one academic year.

Requirements for the Doctor of Philosophy in Social Sciences

1. See section on Graduate Admissions and general information on the Graduate Division.
2. School requirements:

   A. Proficiency in a recognized field of scholarly research in which there exists a coherent body of professional knowledge. It is notoriously difficult to specify exactly what constitutes Ph.D. level competence in a subject matter area. Students will normally be expected to append to their degree programs a bibliography and a list of courses to be undertaken. Proficiency will be tested prior to admission to candidacy by written and oral examinations and inspection of the student's completed research papers.

   B. An understanding of the major techniques of social analysis and their application in at least two traditional social science disciplines. This understanding must include a grasp of both the theoretical and empirical techniques, and the results achieved from their use.

   C. Proficiency requirements in mathematics, statistics, and computing, equivalent to two years of college mathematics (through calculus), one year of statistics, and one quarter course in computer techniques.

   D. Proficiency in reading social science publications in one foreign language or a higher level of proficiency if required by the nature of the student's research program.

   E. Dissertation as described above under general discussion of the School's Graduate Programs.

Requirements for the Doctor of Philosophy in Psychology

1. See section on Graduate Admissions and other general information in the Graduate Division.

2. School requirements:
   Because of the varied nature of contemporary psychology, no single course of studies can be devised to fill the needs of all students. Therefore, the program seeks to provide a maximum degree of flexibility in designing the course of study best fitted to each student.

   The first task of the student and his committee is to construct a program for the year. By the end of the first year, it is expected that the student will have demonstrated an adequate degree of knowledge from a broad sample of current psychological problems and techniques. For purposes of this program, an adequate fund of such knowledge is defined as follows:

   (a) Familiarity and research competence in three broadly defined areas of research. These areas may be selected from among several core research courses offered throughout the year. The core courses emphasize study and practice of the methods of data analysis and the research techniques used in each area. Core offerings in the standard areas such as perception, cognition, learning, sociality, and personality will be offered as well as courses in new areas defined by the special interests and competencies of the faculty. The first-year graduate student, to increase the breadth of this exposure to different methods and approaches, is encouraged to select his core courses so that there is no overlap among the instructors teaching the courses.

   (b) Demonstration of the experimental design and statistical skills necessary for psychological research.

It is not required that the student take courses in order to demonstrate his competence. Courses in the areas listed above will be offered as part of the psychology program, but students whose preparation or personal inclination lead them to work independently are free to do so. In all cases, demonstration of the necessary skills will be through submission of research papers and adequate performance on examinations. Evaluation of this work will be made by the individual teaching the comparable course at the time the examination is given.

During the second year, the student is expected to complete any parts of the first-year program which may not have been completed owing to scheduling problems for the need to fill in deficiencies in his general knowledge. However, the emphasis in the second year will be specialization in the area in which the student plans to do his dissertation research; special topics courses in psychology, individual reading and research, and courses in related disciplines will ordinarily occupy the bulk of the student's time.

During his third year, the candidate must submit a dissertation proposal to his advisors. The proposal will consist of a thorough examination of the history of the problem, its current status, and the way in which the proposed research will further knowledge in the designated area. The final section of the proposal will contain a detailed research design.

The dissertation completes the final requirement for the degree.

Requirements for the Doctor of Philosophy in Political Science

1. See section on Graduate Admissions and general information on the Graduate Division.

2. School requirements:
   The course of studies in political science follows closely that of Social Sciences with the additional requirement that all students pass a written examination based on the program of reading in political science they undertake during their first quarter.

Social Sciences Faculty

Albert J. Ahumada, Jr., Ph.D. University of California, Los Angeles, *Assistant Professor of Psychology*

Douglas M. Amedeo, Ph.D. University of Iowa, *Assistant Professor of Geography*

Joel D. Barkan, M.A. University of California, Los Angeles, *Acting Assistant Professor of Political Science*

William H. Batchelder, Ph.D. Stanford University, *Assistant Professor of Psychology*

Duran Bell, Ph.D. University of California, Berkeley, *Assistant Professor of Economics* (on leave)

Arnold Binder, Ph.D. Stanford University, *Professor of Psychology and Director of the Program in Social Ecology*

Isabel M. Birnbaum, Ph.D. University of California, Berkeley, *Assistant Professor of Psychology*

John P. Boyd, Ph.D. University of Michigan, *Assistant Professor of Mathematical Anthropology*

Myron L. Braunstein, Ph.D. University of Michigan, *Associate Professor of Psychology*

John S. Brown, M.S. University of Michigan, *Acting Assistant Professor of Social Science and Information and Computer Science*

Michael L. Burton, Ph.D. Stanford University, *Assistant Professor of Anthropology*

Michael Butler, B.A. Harvard University, *Assistant Professor of Social Science*

Douglas K. Chalmers, Ph.D. State University of Iowa, *Assistant Professor of Psycholinguistics*

Benjamin N. Colby, Ph.D. Johns Hopkins University, *Assistant Professor of Psychology*

Peter W. Culicover, B.A. City College of New York, *Acting Assistant Professor of Social Science*

Richard L. Degerman, Ph.D. Johns Hopkins University, *Assistant Professor of Psychology*

Lyman Drake, Ph.D. Massachusetts Institute of Technology, *Lecturer in Political Science*

Robert Dubin, Ph.D. University of Chicago, *Professor of Sociology and Administration*

Julian Feldman, Ph.D. Carnegie-Mellon University, *Professor of Psychology and Information and Computer Science, Assistant Chancellor for Computing*

Denis J. Fenton, M.A. University of California, Los Angeles, *Lecturer in Social Science*

Raul A. Fernandez, M.A. Claremont Graduate School, *Acting Assistant Professor of American Studies and Economics*

Gordon J. Fielding, Ph.D. University of California, Los Angeles, *Associate Professor of Geography and Administration*

Lewis A. Froman, Jr., Ph.D. Northwestern University, *Professor of Social Science*

Henry J. Hamburger, M.S. University of Minnesota, M.S. University of Michigan, *Acting Assistant Professor of Mathematical and Computer Models*

Joseph T. Hart, Ph.D. Stanford University, *Assistant Professor of Psychology*

Sheen T. Kassouf, Ph.D. Columbia University, *Assistant Professor of Economics*

Leo Keller, Ph.D. Indiana University, *Assistant Professor of Psychology*

Mary Key, Ph.D. University of Texas, *Assistant Professor of English and Social Science*

Jerome Kirk, Ph.D. Johns Hopkins University, *Assistant Professor of Sociology and Anthropology*

Charles Lave, Ph.D. Stanford University, *Assistant Professor of Economics*

Jean C. Lave, Ph.D. Harvard University, *Assistant Professor of Anthropology*

Craig MacAndrew, Ph.D. University of Chicago, *Associate Professor of Psychology*

Harold M. McCarty, Ph.D. University of Iowa, *Visiting Professor of Geography*

Duane Metzger, Ph.D. University of Chicago, *Associate Professor of Anthropology*

Robert Newcomb, Ph.D. University of California, Santa Barbara, *Lecturer in Social Science*

Lyman Porter, Ph.D. Yale University, *Professor of Administration and Psychology and Associate Dean of the Graduate School of Administration*

A. Kimball Romney, Ph.D. Harvard University, *Professor of Anthropology and Dean of the School of Social Sciences*

Roger W. Russell, D.Sc. University of London, *Professor of Psychobiology and Psychology and Vice Chancellor — Academic Affairs*

Harvey Sacks, Ph.D. University of California, Berkeley, *Associate Professor of Anthropology and Sociology*

William R. Schonfeld Ph.D. Princeton University, *Assistant Professor of Political Science*

Jack Sklansky, Sc.D. Columbia University, *Professor of Electrical Engineering and Information and Computer Science*

Volney Stefflre, B.A. Reed College, *Associate Professor In-Residence of Psychology and Anthropology*

David Sudnow, Ph.D. University of California, Berkeley, *Assistant Professor of Sociology*

Fred E. Tonge, Ph.D. Carnegie-Mellon University, *Professor of Administration and Information and Computer Science*

John Wallace, Ph.D. Northwestern University, *Associate Professor of Psychology and Administration*

William Watt, Ph.D. University of Pennsylvania, *Associate Professor of Linguistics*

Christian Werner, Ph.D. Free University of Berlin, *Associate Professor of Geography*

Kenneth Wexler, Ph.D. Stanford University, *Assistant Professor of Psychology*

Eleanor Wynne, M.A. University of Washington, M.A. University of Oklahoma, *Lecturer in Social Science and Director of Laboratory Preschool*

Courses in Social Sciences

Courses in the School do not always resemble the conventional university course either in content or in format. Enrollment in a course is simply a commitment on the part of a student that he will educate himself (with such faculty assistance as is required).

Students at any level are encouraged to suggest areas of individual study and may (with faculty approval) pursue any intellectually challenging area within the social sciences. Such courses may include special seminars, study projects, individual papers, or any other useful educational activity. The faculty encourages students to present evidence that they have done interesting and original work and to receive official credit for that work by enrolling in an individual study course. Such courses are numbered 199 (undergraduate) and 299 (graduate).

Students from other schools are encouraged to take courses and talk with faculty within the School of Social Sciences. In addition to the introductory courses, many of the upper-division courses are open to students without previous work in social science.

To supplement the basic courses and to provide both majors and non-majors (both graduate and undergraduate) with the experience of pursuing a subject in depth, the School offers a number of "special topics" courses. The specific topics to be covered in any quarter are announced at the time of pre-registration. Generally speaking, special topics courses are not repeated each year. Rather the student samples from those courses available in a particular quarter.

All courses in the School are listed under "Social Science." A letter suffix has been added to the course number for identification of the major emphasis. Below is the key for such suffixes:

	Single quarter or 1st in a sequence	2nd quarter in a sequence	3rd quarter in a sequence
Anthropology	D	E	F
Economics	G	H	J
Geography	K	L	M
Political Science	N	P	Q
Psychology	R	S	T
Social Science	U	V	W
Sociology	X	Y	Z

Listed below are course descriptions for *some of the proposed courses* to be offered during 1971-72. At the *beginning* of each quarter (during registration week) a listing of the courses offered will be available at the Office of the Dean, Room 300, Humanities-Social Sciences Building.

1U Introduction to Analysis (1)
A basic introduction to the models and tools of analysis of social science.

2U The Earnestness of Being Important (1)
Man is an animal who seeks significance in the things he does and from the things he observes. In this course we will explore how and why men go about giving their lives meaning.

4U Social Change and Development (1)
Why are the poor nations so poor? What prevents their development? Are social and cultural factors at fault? Why is economic development a "mixed blessing?" What are the problems of modernization and economic development? The course will describe economic and cultural conditions in underdeveloped nations in terms of a theoretical framework for understanding and promoting change. Discussion of the economic processes and problems associated with development will be integrated with the study of social and cultural variables which can hinder or stimulate those processes. This is the first part of a two-course sequence, but may be taken by itself.

5U Freshman Seminars (1)
Seminars on various topics which pertain to the relation between social science and other fields of study. (Non-majors only.) Prerequisite: freshman standing.

7R Cognitive Development (1)
A survey of the child's cognitive development with special emphasis placed on the acquisition of logical and perceptual structures. Prerequisite: freshman standing.

7U Introduction to Sampling (1) S
Introduction to theory and methods of poll sampling, with emphasis on sampling error. Sampling errors in simple experiments.

8U Perspectives of Human Analysis (1)
Social analysts have different perspectives or ways of looking at human behavior. This course will attempt to introduce students to the idea that they may not only "choose" the perspective or perspectives they think most interesting and stimulating, but may also devise one of their own.

9U SIMSOC (1)
This course will begin by playing a game called SIMSOC, which simulates social, economic, and political processes of society. In playing the game, students will encounter problems and dilemmas analogous to those faced by citizens of a real society. Examination of processes of social conflict and social control. Explore and evaluate gaming as a research strategy.

10D Introduction to Anthropology (1) F
Some different cultures and subcultures will be studied. The point of view is taken that human behavior can be described by a set of culturally defined rules or patterns. Various formal models will be presented to account for these patterns of behavior. The question of human freedom will be phrased as the extent to which a person can choose his own set of rules to live by.

10G Introduction to Economics (1) F, W, S
A basic introduction to economics.

10K Introduction to Geography (1) W
An introductory course in human geography taught by computer-based instruction. Course is designed to enable students to understand various behavioral processes and their impact on spatial distribution.

10N Introduction to Political Analysis (1)
An introduction to the basic problems and basic analytical tools of political science. Practice in analyzing current political issues. Fundamental to further work in political science.

10R Introduction to Psychology (1) F, W, S
Readings in a basic introductory textbook are supplemented by lectures on selected topics, e.g., Experimental Methods, Computers in Psychological Research, Word Meaning, Language, and Applied Problems.

10X Introduction to Sociology (1)
A basic introduction to sociology.

11K Introduction to Model Building in Geography (1) F, S
An introduction to geographic research and scientific research in general, with emphasis on the construction and evaluation of spatial models.

20D How to Know What's In (1)
Anthropologists have long been plagued by the problems inherent in studying groups of which they were not members. This course will examine ways in which "outs" can discover how "ins" define class membership.

100L Advanced Analysis: Urban Theory (1)
The fundamental question investigated in this course may be stated as follows: "Are there laws which determine the number, sizes, and distribution of towns?" In the process of pursuing this investigation, we examine relationships between the size of towns and their surrounding market areas, consumer and entrepreneur spatial "behavior," demand cones and competition for space and, finally, alternative systems of service centers.

111R Experimental Psychology (1) F
The emphasis during this quarter will be on the design of experiments and the analysis of results obtained in psychology experiments. The advantages and disadvantages of within subjects, between subjects, mixed designs, control of experimental error, and related topics will be critically evaluated. Experiments will be conducted in laboratory sections and the results evaluated and discussed.

111S Experimental Psychology (1) W
Laboratory work will be emphasized this quarter. Class experiments will be conducted. Related experiments in the literature will be discussed, as well as the general content of each area in which a class experiment is conducted. Proposals for independent research will be prepared and evaluated by the class.

111T Experimental Psychology (1) S
Continuation (third quarter of Social Science 111R-S-T). Prerequisites: Social Science 111R-S.

116U Differing Perspectives on the Contemporary World (1) W
This course will survey the leading thoughts of several writers whose works are, or are often presumed to be, relevant to an informed understanding of the contemporary world; among those whose works will be considered are Berle, Camus, Djilas, Drucker, Marcuse, Marx, C.W. Mills, Polyani, Riesman, and Veblin.

118U Topics in Urban Problems (1)
A *reading-field-work* course limited to a small number of students. Students taking the course will be expected to engage in field-work through a community institution in the surrounding cities (police departments, city councils, etc.). Students will be expected to prepare their own list of readings in consultation with the instructor.

119U The Economics of Discrimination: The Mexican-American I (1)
An introduction to the economic problems of the Mexican-American in the Southwest. The past and present situation of the Mexican-American will be studied through the use of economic models of discrimination, development and underdevelopment, illicit behavior, etc. Topics will include: migration, education, land tenure, language, crime, delinquency, and consumer problems.

120G Individual Decision Making (1)
Consideration of problems associated with decision making under uncertainty. Discussion of foundations of modern utility theory, random variables, probability distribution, opportunity loss, the value of perfect information, and the value of sample information and Bayes' theorem. Prerequisites: Mathematics 5, 6.

120U Structural Models of Behavior (1)
Introduction to some numerical techniques which attempt to describe the structure inherent in multivariate data. Among the topics to be covered are: information theory, graph theory, cluster analysis, discriminant analysis. Psychological applications of the techniques will also be discussed. Prerequisite: Mathematics 5.

123X Sociology of Education (1)
Internal structure and dynamics of schools are analyzed with reference to nature of organizations, professions, and clients. Topics to be examined: leadership climate, role strain, formal/informal organizational structure, influence of student subculture,

problems of authority and control, aspiration and mobility of clientele. Analyze function of school in community and society: occupational system, acculturation, political system, social class, the family.

124G-H-I Econometrics I-II-III (1-1-1) F, W
A three-quarter course on specification of mathematical models in social science: Single equation models and linear regression. Prerequisites for 124G: (or concurrent) Mathematics 6A or 3A or permission. Prerequisite for 124H-I: previous quarter(s) of sequence or consent of instructor.

124R Sensation and Perception (1)
A survey of theories and experimental work in the fields of sensory and perceptual processes. Prerequisite: Social Science 10R.

126K Regional Analysis I (1) F
This course will be concerned with the detection and recognition of regional patterns. The objective will be to examine and develop methods designed to group n spatial observations, each having scores on m traits so that the internal uniformity of the resulting groups is maximized, subject to imposed constraints. Prerequisites: Mathematics 5, 6, junior standing.

126L Regional Analysis II (1) W
After the underlying regional pattern of a spatial distribution is detected, the interaction between regions in this pattern needs to be analyzed. To this end, gravity models, interregional input-output models, and interregional linear programming will be examined. Prerequisite: Social Science 126K.

129K Pattern Analysis of Geography (1)
A general examination of geographical analysis at an advanced level. Prerequisite: junior standing.

129U Political Anthropology (1)
Political anthropology as a distinctive interdisciplinary field of study. Problems of identifying "the political" and its relationship to other social phenomena: kinship, relation, social stratification. Nature and types of "traditional" political systems with special reference to sub-Saharan Africa.

130D Entrepreneurial Activity and Cultural Change (1)
An analysis of the processes of social and cultural change with special attention to the role of entrepreneurial innovators.

130U Introduction to Psycholinguistics (1)
Study of a particular topic in the psychology of language, with particular emphasis on syntax and semantics.

130V Psycholinguistics (1) S
The complementary notions of "structure" and "process" are of central importance in building certain models of behavior. Roughly speaking, process applies to structure and (sensory) input to yield behavior. We observe only input and behavior. How do we discover structure and process? Models applicable to selected topics in psychology and linguistics, including pattern discrimination, meaning of words, memory, and sentence production, will be analyzed.

132R Learning Theory (1) W
An investigation of the processes of learning and memory on the human and subhuman levels with an emphasis on the theoretical structures which have been formulated to explain them. Prerequisite: Social Science 10R.

133K-L-M Urban Policy (1-1-1) F, W, S
Three-quarter sequence analyzing the internal structure of cities, central place theory, and the politics of urban change.

133R Psychology of Creativity (1) W
A seminar devoted to the discussion of the psychological dimensions of literary and artistic creativity. Non-majors only.

134K Transportation Analysis (1) F
Studies of the spatial distribution of transportation phenomena from a theoretical point of view. Representative models on the estimation, prediction, and optimization of flow and network development will be discussed.

134L Transportation Theory (1) W
Advanced topics in transportation system analysis and planning: land use and traffic generation — traffic flow and network theory — transportation impact — transportation policy. Emphasis will be on theoretical approaches and mathematical models. Prerequisites: Mathematics 5, 6, or equivalent.

134M Physical and Man-Made Networks (1) S
A research seminar, emphasizing the mathematical structure of network phenomena. Constructing new models of network development and operation, and testing these against empirical examples (highways, subways, pipelines, rivers, etc.). Prerequisites: Mathematics 5, 6, or equivalent.

134N African Politics (1) F
Traditional society and politics in Black Africa and the impact of colonial rule. Nationalism and independence: structural and ideological expressions. The dilemmas of nation-building and development. Prerequisite: Social Science 1 or consent.

136D Applications of Multidimensional Scaling (1)
A seminar on the uses of the newer scaling methods, such as multidimensional scaling and hierarchical clustering, as instruments for the study of cultural phenomena. Substantive topics will include semantics and may include such areas as decision models and behavior observation.

137D Seminar in Mathematical Linguistics (1)
A discussion of current research in the area, including both syntax and semantics; new theoretical developments will be stressed.

138D Cognitive and Semantic Problems of Bilingualism (1)
Exploration of various methods/theories for the analysis of selected semantic systems from both languages of bilingual children. Attention will be paid to the implications of such findings for cognitive theory. There will be continuous access to a small group of bilingual Samoan children.

138R Cognition (1) S
Cognitive activity will be considered from a variety of perspectives with primary attention to that of the experimental study of human thought processes. Topics will include: cognitive maps, strategies, games and puzzles, "rational" and "intuitive" thinking, clinical diagnosis, conceptual behavior, computers and thought, thinking and problem solving in a real world. Students should reserve one afternoon during the week of May 18 for laboratory participation.

139R Psychological Foundations of Education (1)
An examination of the psychological basis for learning and development in education; the psychology of the school situation: the evaluation, interpretation, elaboration, and stimulation of basic intellective, cognitive, and sensate abilities.

139U Language Development (1)
Syntactic and semantic development of language in the young child.

140D Models of Primitive Economies (1)
This class will construct models of primitive economies, using classic anthropological sources for inspiration. Topics to be covered will include: production, exchange, and distribution of goods. The course will incorporate a psychological and linguistic point of view. Prerequisites: Social Science 1U or Social Science 10G or consent.

140R Computers in Psychological Research (1)
An overview of the use of computers in psychology. Computations, generating displays, testing implications of models, computer models of behavior brain simulation, heuristic programming, and simulation of complex information processing. Prerequisites: Social Science 10R and Information and Computer Science 1 or consent.

141D Social Organization (1)
Course will cover some of the important topics in the anthropological study of social organization with emphasis on the problem of obtaining information from people about the organization of their society. Prerequisite: Social Science 10D or consent.

143G Microeconomic Theory I (1)
The study of the operation of the market under conditions of competition, oligopoly, and monopoly. Relations between supply and demand. Price and output determination. Economic concepts of returns and costs.

145D The Ancient Maya (1) S
A study of ancient Mayan civilization with special emphasis on their religion. Archeological, historical, and modern ethnographic materials will be analyzed. Prerequisite: fluent knowledge of Spanish.

145U Q-Technique and its Methodology (1)
The essential features of Q-technique and its accompanying methodology will be presented together with a series of studies that will exemplify its applicability to problems of both "single case" and group analysis. Students will be expected to utilize technique by conducting a study of their own dealing with an area of their interest, e.g., self-concept, attitude change, altered states of consciousness, artistic preference, etc.

146D Some Topics in Applied Behavioral Science (1)
Concerned with (1) techniques for predicting how large populations will respond to new objects and/or events, (2) problems in the design of self-reproducing and self-redesigning organizations, (3) problems in influencing the development of a small province, (4) techniques for 24-year projections of social phenomena and problems in their application to prediction of aspects of life in the year 2,000. Course will be limited to ten students and will meet one or two Saturdays a month.

147D Cross-Cultural Comparison of Social Organizations (1) W
Through intensive analysis of the social organizations of a group of closely related Ge tribes in Central Brazil, we will try to reach general conclusions about the problems involved in making cross-cultural comparisons.

147N The Third World (1)
Non-western societies — are they really different? Why did contact with the West lead to colonial rule over much of Afro-Asia? Was colonialism, on balance, a "modernizing" force? Have the new Afro-Asian states been integrated into the international system? On what terms? Is there a "Third World?" What is or can be its international role? How can small, weak states achieve political identity in an international system dominated by super-powers?

147R-S Psychology of Awareness (1-1) F, W
The topics studied will include: hypnosis, dreaming, daydreaming, bisociation, coma states, psychedelic experiences, yoga, and meditation. Although this course will use lectures and discussion groups, attendance is not required; every student is expected to devise his own plan of studies in consultation with the instructor. This is a two-quarter course; no grades will be given until the end of the second quarter. Do *not* enroll unless you can participate both quarters. Prerequisites: Social Science 10R and consent.

147U Computer Simulations of Social Science Models (1)
An investigation into the use of computers to simulate models which are of interest to the social scientist. The educational value of these simulations will be emphasized.

147X The Sociology of Deviant Behavior (1)
An examination of the "causes" and forms of improper conduct in American society, with focus both upon more traditional and visible forms of deviance, e.g., drug use, crime, etc., and upon less visible kinds of "improper" behavior, e.g., troublemaking, sexual deviance, "dropping out," etc. The attempt will be made to develop a general concept of "deviance" that has general validity.

148N Students and Politics (1) W
An examination of the underlying variables behind student participation *and* non-participation in the political arena. Topics to be explored include the generation gap, alienation, idealism, ideology, the nature of the educational system, and the roles students intend to play in their societies. The course will be taught from a comparative perspective and include an analysis of student movements in both industrialized and developing areas.

149X Mathematical Sociology (1)
Topics in the formal and quantitative description of social processes, and the use of mathematical language to state the results of standard forms of social research, particularly sample surveys. J. S. Coleman's use of continuous-time stochastic processes to model relationships among social attributes will be applied to a variety of data, and students will be asked to develop and present simple model schemes with broad social science application. Prerequisites: Mathematics 3A or 6A, Social Science 1U.

150D Comparative Study of Traditional Narrative and Short Stories (1) F
Seminar to analyze the values, psychology, and narrative structure of folktales and short stories of Irish and other cultures, both advanced and archaic.

150K Urbanization in East Africa (1) S
Social, economic, and political change which has accompanied urbanization in East Africa, with special reference to Tanzania.

150N Political Change (1)
Is political change a distinctive process or merely an aspect of "more fundamental" socio-economic processes? What, if any, is the "direction" of political change, historically and in the contemporary world? Are the concepts of "development" and "modernization" useful explanatory constructs, and how, if at all, shall we use them? An examination of several theoretical approaches: Marxism, Leninism, Dichotomous models, Modernization theory, Developmental theory, and Syncretism. Some critical problems: institutionalization, participation, power, linkage, reform, and revolution.

151K Resources and Man (1) W
Problems of resources utilization as viewed by the various social science disciplines. Evolution of the conservative movement. Environmental pollution and related problems in selected regions of the United States.

151N Sociological Problems of Africa (1) W
An examination of selected groups and processes of social change and their effect on African political systems. Discussion will focus on the nature of plural societies conflict, urbanization, class formation, and elites. Students taking course should have a basic understanding of African politics.

151U Topics in Social Science Statistics (1)
Discussion will focus upon the descriptive aspects of some basic statistics. Computer-provided graphics will be used to support the investigation of these topics.

152U Computer Technology in Social Science (1) F
Applications of computer technology to the social sciences emphasizing data analysis, simulation, real-time experimentation, and computer-aided learning. Prerequisite: Information and Computer Science 1.

153X Occult Fads and Fad Cults (1)
Beginning with an epistemological analysis of such fashionable theories as theosophy, scientology, taoism, sensitivity-training, and astrology, we will study the organizational history of a selected cult, to discover the social functions of cults and fads. Finally, we will exercise our understanding by inventing a superstition.

154N Political Socialization (1) W, S
What is political culture, and what is its significance for the political system? What do the members of a society learn about the political system in which they live? From whom do they learn? What are the processes by which political learning takes place? In what ways do these processes vary from one sub-group of society to another? In

what ways does political learning differ in underdeveloped and developed societies and in different types of political systems? Prerequisite: Social Science 10N or consent.

156N Comparative Political Parties and Electoral Systems (1) F

A comparison of the party and electoral systems of the United States, Britain, and France: the functions parties perform in the political system, leadership, their internal organization, the nature of membership, ideology, recruitment, the social forces and interests to which parties respond. Topics will be examined from the standpoint of their relation to political campaigns. Students taking course will be expected to involve themselves in an election campaign of their choice during the quarter.

157N Political Penetration and Participation in New States (1) S

An examination of the concepts of political penetration and participation as found in the development of central/local relations in new states. To what extent do the concepts of penetration and participation serve any theoretical purpose? In what ways might these concepts be operationalized so as to provide a useful methodology for understanding the processes of political change? Students will be free to explore the topic in any geographical and historical context.

159R Psychometrics I (1)

A broad survey of unidimensional scaling techniques including the methods of pair comparisons, successive categories, fractionation, equisection, and scalogram analysis. Prerequisite: Mathematics 5.

159S Psychometrics II (1) W

A survey of methods of multivariate analysis, including profile analysis, discriminant analysis, factor analysis, uncertainty analysis, and other topics. (Does *not* need Psychometrics I as prerequisite.) Prerequisite: Mathematics 5.

159U An Introduction to Freud and Certain of the Post-Freudians (1) S

The theories of Freud and certain of the Neo-Freudians (e.g., Fromm) and post-Freudians (e.g., Marcuse, Szasz) will be introduced and subjected to critical analysis. Special emphasis will be placed on the relation between fact and theory.

161R Models of the Brain (1) F

An investigation into brain models based upon physiologically plausible mechanisms, which have been used to explain behavioral phenomena in learning, perception, and motivation. Prerequisite: junior or senior standing or consent.

164R History of Psychology (1)

A history of the development of various schools and systems of psychological thought. Prerequisite: Social Science 10R.

165R Experimental Games I (1) F

Games with a winner and a loser; strategies, solutions. Mixed-motive games, threat, force, stability, and "rationality." Games as models of the real world and as tools of psychological investigation. Prerequisite: one year college math, not concurrent.

165S Experimental Games II (1) W

Continuation of Social Science 165R. Bargaining, political power, stochastic models of game behavior. Some of the literature of experimental gaming. Lectures, seminars, guest speakers.

166R Psychotherapy and Meditation (1) S

Discussion will center on comparisons of the concepts and techniques from several systems of psychotherapy and meditation. These will include: bioenergetics and tantra; Gestalt and Tibetan Buddhism; and Benoit and Zen.

167R The Study of Memory (1)

Theories and experiments in selected areas of human learning and memory will be discussed. Students will conduct experiments relevant to current questions in the study of memory. Prerequisite: Social Science 10R or consent.

168U Social Deviance: The Problem of Drinking, Drunkenness, and Alcoholism (1)F

This course will be concerned with the effect of alcohol on man. Particular stress will be placed on cross-cultural materials in the interest of developing a radically social

explanation of the relation between man, alcohol, and society. The relevance of such a formulation to the understanding of other (non-alcoholic) "alterations in consciousness" will be discussed.

171R Style in Language (1)
Selected topics in the study of personality and language such as speech and prose styles as a function of individual and class differences, speech repertoires, the language of schizophrenia, etc. Prerequisite: Social Science 10R.

171U The Behavior of Children (1) F, W
A laboratory/lecture course on the growth and development of children ages 2-7 years. Main focus on observing, recording, and understanding the ordinary behavior of children in group situations, and the theory of culture acquisition.

172R Science and Ethics (1)
Same as Social Ecology 105. A discussion of ethical problems which arise from man's social and technological development, with emphasis on specific problems, such as population control, organ transplantation, genetic engineering, biological and chemical warfare, nuclear testing, etc. For each topic the focus will be on determining the psychological and sociological determinants of our present moral values. How have we acquired our present feelings about what is right and wrong? Is there an objective standard by which ethical codes can be judged, or are standards primarily determined by social factors?

173R Design and Interpretation of Experiments (1)
Analysis of the problems involved in constructing, carrying out, and drawing conclusions from an experiment. Topics include: selection of independent and dependent variables, scaling of variables, experimental design and confounding, operational definitions, generality, reliability, and validity of conclusions.

180K(A), 180L(B) Location Theory A & B (1-1) W, S
A two-quarter offering, Introduction and Advanced. Location Theory A is a prerequisite for B. An examination of the spatial relations of economic activities. Specific attention is devoted to analyzing factors "determining" the relative advantages of different types of location from the viewpoint of the individual producing and consuming unit. Includes discussions on such topics as theories of industrial plant location, agricultural and urban land use models, and market area analysis. (A — Undergraduate; B — Graduate)

181K(A), 181L(B) Regional Economic Development and Growth (1-1)
A two-quarter offering, Introduction and Advanced. An analytical approach to the study of economic growth and development in spatial subsystems of a nation. Emphasis will be on increase in the output of regions and/or increase in the set of final commodities available to regions. Economic expansion in one region and the nature of its influence on other regions and interrelations between regional and national growth are two of the major themes. (A — Undergraduate; B — Graduate)

181U Creative Learning in Children (1) F
This course emphasizes the writing of lessons to be used in teaching machines at the Experimental Elementary School. After students have developed their programs to an acceptable standard, they will then test them in the School and assist in the teaching of the children.

182U Meaning of Words (1)
An attempt to construct a scientific theory of the meaning of words. The experimental and theoretical literature will be discussed with emphasis on recent approaches.

184W Behavior of Children II (1) W, S
Advanced study of growth and development of children. Prerequisite: Social Science 171X.

188U Formal Models of Language (1) W
Formal definition of grammar. Simple formal grammars as models of English and of programming languages. Finding the structure of a sentence or a program statement. Formal study of English: deep structure and surface structure; transformations,

features, and sentence embedding; the attempt to find a boundary between grammar and semantics.

191U The Notion of Alcoholism (1)
This will be a study and discussion course focusing on the conceptual and the evidential status of the notion of "alcoholism." Special attention will be directed to the functions this notion serves in the broader social world, to the relation of alcoholism to other conditions and states of mind, e.g., "mental illness," and to the ways in which we come to recognize its existence.

195U The Organization of Story-Telling in Conversation (1)
The course will involve presentation of a series of lectures on the construction of stories in conversation and the techniques for dealing with presented stories. This course will be open to graduate or undergraduate students.

197U Does Education Work? (1)
A search for evidence bearing on the question, "What makes a difference in education?" Is there anything — any characteristic of the person or of his educational environment — that consistently leads to better (or worse) learning? What that is supposed to matter doesn't? In view of the evidence, what should schools be like?

Graduate Courses in Social Sciences

280D-E-F The Costs and Benefits of Some Well-Worn Analytical Ruts in the Social Sciences (1-1-1) F, W, S
After discussing ways in which social science disciplines are constrained by customary usage of a small number of data collection techniques, data analysis techniques, and theories, we will concentrate on cross-discipline raiding to enrich the design of cross-cultural research problems.

280R Computer-Based Models of Behavior (1) F
Computer simulation will be explored as a means of studying human information processing. Models of theorem proving, verbal learning, decision making, concept formation, and problem solving will be explored.

280U Computer Simulation Models and Methods for the Social Sciences (1) W
An investigation of the current developments in simulation with applications on the UC Santa Barbara Culler-Fried system.

280X Theory Building (1)
A non-mathematical examination of the components of theory and rules for their combination into scientific models; research as (1) source of theory components, and (2) test of predictions made from a model.

281K-L-M Spatial Perception and Mental Maps (1-1-1)
This seminar will concentrate on the general topic of spatial perception and related mental maps. The term "spatial" will specifically refer to geographic areas such as neighborhoods, communities, "landscapes" (rural or urban), and regions. Primary focus of seminar's topic: identification and comparative analysis of mental maps formed by people as products of their perception of these areas (and related interests).

281R Dreams, Myths, and Dream Interpretation (1)
This course will consider Senoi, Freudian, and Jungian methods of dream interpretation.

281U Language and Behavior for Graduate Students (1)
Review of experimental and descriptive techniques and study of relations between languages and thought and/or language and behavior. (Students should have some background in psychology or linguistics.)

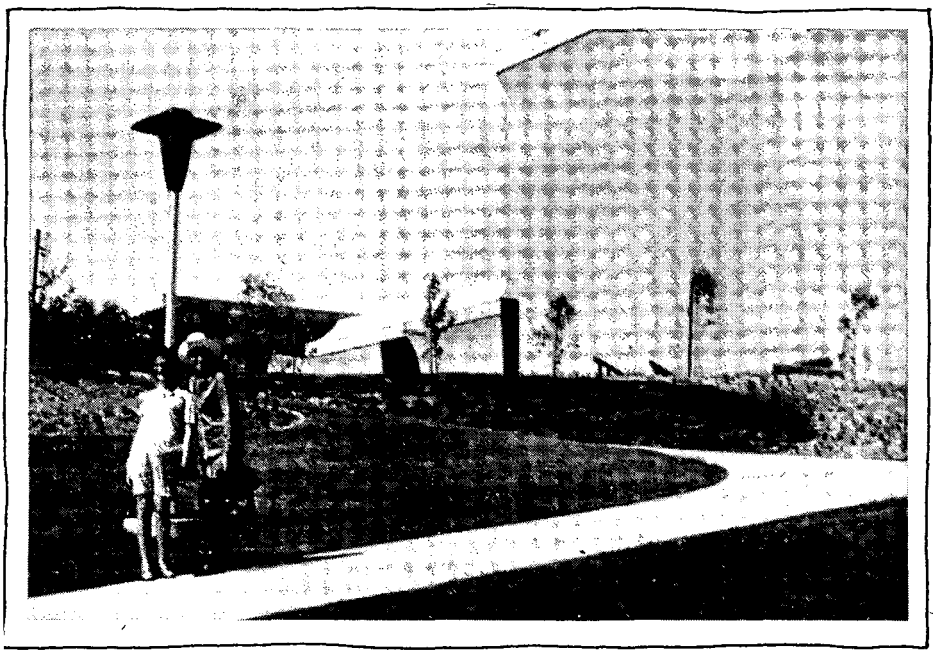
282R Learning Theory Seminar (1)
A seminar which examines and evaluates some of the current learning and memory theories for humans and lower animals. Major emphasis is on theories characterized by quantitative predictions and explicit assumptions. (Class limited to 15 students.)

284R Experimental Design I (1) W
First of a two-course sequence aiming at understanding of and practical experience with experimental designs and the associated statistical techniques for more than two treatment groups.

284S Experimental Design II (1) S
The second of a two-course sequence designed for the graduate student who has had an introductory statistics course and knows simple algebra, who needs an understanding of and practical experience with experimental designs involving more than two treatment groups and with the statistical techniques related to them.

287R The Concept of Rules (1)
The concept of rules has the same status in social science as does the concept of law in the natural sciences. This assumption will initiate readings and discussion of ways of formulating rules for understanding human activities. Because language is so obviously rule-governed, it will serve as a paradigm for this investigation.

288R Research in Verbal Learning (1) W
An intensive study of current research in selected areas of verbal learning. Topics stem from areas such as free-recall learning, organization in learning and memory, and the role of interference in forgetting.



The school of fine arts.

School of Engineering

Robert M. Saunders
Dean

The School of Engineering offers junior-senior and graduate programs of study for men and women who will engage in the professional practice of engineering primarily as it relates to design, development, research, and teaching, in industry, government, or a university. Programs at all levels emphasize the fundamentals underlying engineering so as to facilitate future maintenance of engineering competence by either formal or informal study. Thus programs of study in the School of Engineering endeavor to provide UCI graduates with adequate intellectual tools to enter the profession (after a short internship) and also provide for the continued updating of their technological knowledge.

At the undergraduate level a single program in Engineering is offered with sufficient freedom in choice of technical electives to permit developing areas of concentration in Civil and Environmental, Electrical, and Mechanical Engineering. A multiple major in Environmental Management (with the Schools of Biological Sciences and Social Sciences) requires 48 courses for graduation versus the single major in Engineering of 45 courses. The Engineering program is designed to maximize the freedom of choice while at the same time being sufficiently structured so as to provide a sound base in Engineering. In general each student will devote approximately 40% of his time over the four years to the scientific and mathematical backgrounds pertaining to the various engineering fields; the purpose of this intense study of the sciences and mathematics is to make sure that graduates are well grounded in the laws and constraints of logic and nature. Another 20% of the program will be assigned to the study of the fine arts, humanities, and the social sciences. The remaining 40% will comprise engineering subjects.

At the graduate level, programs of study become less and less rigidly structured and specialization becomes more intense. The M.S. program requires nine courses to be completed, but the exact choice of the courses will be a matter of negotiation between the student and his faculty advisor. Thesis or non-thesis programs are available. At the Ph.D. level the program is still less structured but more specialized than at the M.S. level. No courses are required; rather students must demonstrate various competences as they progress toward the completion of their doctoral programs.

Accreditation of engineering programs in the U.S.A. is accorded by the Engineers Council for Professional Development to those first professional degree programs having graduates and meeting the minimum standards of the profession. To date the undergraduate electrical option has been so accredited by the ECPD; accreditation of other options will be sought as soon as they have graduates.

Uniquely Engineering student organizations are the Dean's Cabinet and the Engineering Society of UCI (ESUCI). All Engineering students are eligible to be members of the Dean's Cabinet. Composed of students representing all academic levels from freshman through graduate, the Cabinet provides a direct communication link between the students and the Dean. The Cabinet in turn appoints a Committee on Committees which selects students to participate on the committees of the School of Engineering. Whereas the Dean's Cabinet pertains mainly to academic matters, the ESUCI is professional in nature having ties locally and nationally with the engineering profession through its organizations.

All faculty and committee meetings (except those involving personnel considerations) are open meetings; in addition to designated student representatives, all students are encouraged and expected to participate in the development of School policy. Student evaluation of the quality of courses is made annually and both students and alumni make in-depth evaluations of faculty members being considered for promotion or other special actions.

Degrees Offered in the School

Engineering . . . . . B.S., M.S., Ph.D.

Honors are awarded to outstanding graduating Engineering students.

Undergraduate Programs

The undergraduate program leads to a B.S. degree with an option in Civil and Environmental Engineering, Electrical Engineering, Mechanical Engineering, Biomedical Engineering, or Environmental Management. The program is designed to provide a firm background in the basic sciences, through the required courses in physics, mathematics, biology, and chemistry, and a fundamental understanding of the engineering sciences, through the required engineering courses, as well as some specialization via technical electives.

Admission

High school students wishing to begin their engineering programs at UCI should seek admission to the Irvine campus of the University of California designating Engineering as their intended major. Upon registering, a student will be assigned an engineering advisor who will assist in developing a satisfactory program of study and provide the requisite advice for the development of a coherent program of study.

Transfer students are admitted to the School of Engineering upon completion of a freshman-sophomore program in another school at Irvine or at another college, including community colleges. Students seeking admission to the School of Engineering from colleges and schools other than UCI must satisfy the University requirements for admission to advanced standing and must have completed the specific prerequisites for the junior courses to be undertaken in the School of Engineering.

Students meeting the Community College-State College-University compact of 1965 on lower-division requirements may complete the requirements for the B.S. degree in six quarters assuming normal progress.

Requirements for the Bachelor's Degree

University Requirements: See page 23. Note, however, that the breadth requirement does not apply to the School of Engineering.

School Requirements

Credit for 45 courses including the following:

Engineering Core: Egr. 100A-B-C, 101A-B-C, and 105A-B-C

Engineering Electives: Six Engineering Courses

Mathematics: Six courses such as Math 2A-B-C, Math 3A-B-C

Basic Science: Eight courses in physics, chemistry, or biology such as Phys. 5A-B-C-D-E, Chem. 1A-B-C, or Biol. 100A-B-C

Breadth: Six courses from one of the Schools of Fine Arts, Humanities, or Social Sciences and three courses from another of these Schools or the School of Biological Sciences

Computer Science: One course such as ICS 1

Technical Electives: Three engineering or science courses

Free electives: Three courses

Options: Students are expected to choose one of the areas of concentration listed below for their three technical and six engineering course elective package; however upon approval any meaningful program may be followed.

Engineering Options presently available include:
- Civil and Environmental Engineering
- Electrical Engineering
- Mechanical Engineering
- Environmental Management (a joint program with the Schools of Biological Sciences and Social Sciences requiring 48 courses.)

Programs of Study

Students are free to follow any schedule of courses in the program they feel is meaningful to them, but they should complete the requisite physics and mathematics for admission to junior courses in engineering and meet the graduation requirements of the School of Engineering at the end of their allotted collegiate period. Normally a student will wish to complete the science requirements, the digital computing course (Information and Computer Science 1), and some of the courses required in fine arts, humanities, and social sciences in the freshman and sophomore years. Typical programs in the several areas of concentration are available upon request to the Student Affairs Office, School of Engineering.

Students in the School of Engineering should bear in mind the general campus policy which permits them to take courses in areas outside their major, or outside their school, on a "Pass/Not Pass" basis. With respect to programs in engineering, such areas are fine arts, humanities, and social sciences and any course not being submitted as fulfilling the graduation requirements.

It should be emphasized that the programs of study in the School of Engineering are tailor-made to the desires and objectives of individual students. Students will work out suitable programs of study with their faculty advisors. Students must realize that they, and they alone, are responsible for the planning of their own programs and for satisfactory completion of the graduation requirements. However, the faculty stand ready to give every assistance and necessary advice in the planning of programs. A student may substitute courses of his choosing for those required if he can substantiate the merits of his academic plan and obtain the approval of the Faculty of the School.

Proficiency Examinations

A student who thinks himself sufficiently proficient in the subject matter underlying a specific course in the School of Engineering to receive credit without formal enrollment in that course may consult with the instructor of that course to explore what he must do to demonstrate his proficiency and gain credit. Normally, his ability will be demonstrated by a written or oral examination; if a portion of his capability involves laboratory exercises, he may be required to perform experiments as well as to take a written examination. Normally, these examinations (written, oral, or laboratory) will be given at the opening of each quarter in which the specified course is offered. All courses in the School are available for such proficiency demonstrations.

Graduate Programs

Graduate study in the School of Engineering permits specialization in a particular area while at the same time developing breadth. Graduate study toward the M.S. and Ph.D. degrees is applied science oriented and will provide an excellent base for future professional growth through understanding of the basic phenomena associated with the student's chosen field.

Admission

Admission to graduate standing in the School of Engineering is generally accorded those possessing a B.S. degree in engineering or an allied science obtained with an acceptable level of scholarship from an institution of recognized standing. Those seeking admission without the requisite scholarship record may, in some cases, undertake remedial work; if completed at the stipulated academic level, they will be admitted to full graduate standing. The aptitude section of the Graduate Record Examination is required.

Master of Science in Engineering

Those wishing to pursue graduate work in the area of electrical engineering will find programs in control systems, optimization theory, operations research, communication and information theory, pattern recognition, optical systems, and quantum electronics. In the environmental engineering area there are programs in water quality, hydraulics, hydrology, air pollution, and environmental management.

For the M.S. degree with thesis, nine courses are required, of which at least six are graduate level courses; a maximum of two research courses may be submitted. For the M.S. degree without thesis, nine courses will be required,

of which at least six are graduate level and may not include research credit. The M.S. thesis must demonstrate the student's capability of undertaking an original study and carrying it through to a conclusion satisfactory to at least three members of the faculty. For those students electing to study for the M.S. without thesis, a comprehensive exercise demonstrating familiarity with a broad aspect of the field of engineering in which they are majoring will be required. Master of Science programs must be completed in four calendar years from the date of admission.

The detailed program of study is worked out with an advisor who takes into consideration the objectives of the candidate, his preparation, and the specific and implied requirements of the School. Part-time students generally will be limited to one course per quarter if fully employed, and those holding research or teaching assistantships normally will not be permitted a full three-course load. Engineers in industry may find it convenient to complete some courses in University Extension. Courses taken on another campus of the University will be accorded full credit if taken after admission to Irvine; up to three courses will be credited upon admission if taken in Extension or on another campus of the University, or in another university.

Doctor of Philosophy in Engineering

The doctoral program in engineering leading to the Ph.D. is tailored to the individual needs and backgrounds of the student. There are no specific course requirements but rather several milestones to be passed: (1) admission to the Ph.D. program by the Faculty of the School; (2) passage of the preliminary examination assessing the student's background and his potential for success in the doctoral program; (3) satisfaction of the teaching requirements required of all doctoral students; (4) research preparation; and (5) completion of a significant research investigation. The degree is granted upon the recommendation of the Doctoral Committee and the Dean of the Graduate Division. For at least the final two years of the doctoral program it is expected that the student will be a full-time resident in the School. Doctoral programs must be completed in seven calendar years from the date of admission.

Some financial aids such as research and teaching assistantships are available so that each doctoral student, after he has passed the preliminary examination, will have a staff appointment in the School of Engineering for at least one year.

School of Engineering Faculty

Paul D. Arthur, Ph.D. California Institute of Technology, *Professor of Aerospace Engineering, and Associate Dean, School of Engineering*

Casper W. Barnes, Jr., Ph.D. Stanford University, *Professor of Electrical Engineering*

Neil J. Bershad, Ph.D. Rensselaer Polytechnic Institute, *Associate Professor of Electrical Engineering*

Richard R. Brock, Ph.D. California Institute of Technology, *Assistant Professor of Civil Engineering*

Ralph B. Conn, M.S. University of Southern California, *Lecturer in Electrical Engineering*

Byron N. Edwards, Ph.D. University of California, Berkeley, *Lecturer in Electrical Engineering*

Hideya Gamo, D.Sc. University of Tokyo, *Professor of Electrical Engineering*
Warren A. Hall, Ph.D. University of California, Los Angeles, *Professor of Civil Engineering*
Albert S. Jackson, Ph.D. Cornell University, *Lecturer in Electrical Engineering*
Robert C. K. Lee, Sc.D. Massachusetts Institute of Technology, *Associate Professor of Aerospace Engineering*
James S. Meditch, Ph.D. Purdue University, *Associate Professor of Electrical Engineering*
George M. Miller, Ph.D. University of Wisconsin, *Acting Associate Professor of Electrical Engineering*
Lester Mintzer, M.S. Ohio State University, *Lecturer in Electrical Engineering*
Charles G. Pardoen, Ph.D. Stanford University, *Lecturer in Civil Engineering*
John G. Rau, M.A. University of Washington, *Lecturer in Electrical Engineering*
William T. Rhoades, M.S. Massachusetts Institute of Technology, *Lecturer in Electrical Engineering*
G. Scott Samuelsen, Ph.D. University of California, Berkeley, *Assistant Professor of Mechanical Engineering*
Robert M. Saunders, Dr. Eng. Tokyo Institute of Technology, *Professor of Electrical Engineering and Dean, School of Engineering*
Jan W. Scherfig, Ph.D. University of California, Berkeley, *Associate Professor of Civil Engineering*
Roland Schinzinger, Ph.D. University of California, Berkeley, *Assistant Professor of Electrical Engineering*
Jack Sklansky, Eng. Sc.D. Columbia University, *Professor of Electrical Engineering and Information and Computer Science*
Allen R. Stubberud, Ph.D. University of California, Los Angeles, *Associate Professor of Electrical Engineering*

Undergraduate Courses in Engineering

Courses outside of Engineering (e.g., Information and Computer Science) may qualify as engineering electives. Consult the Dean's office.

100A-B-C Lumped Parameter Analysis (1-1-1) F, W, S
Analytical methods for the treatment of systems which can be described by total linear or nonlinear differential equations. Rigid body mechanics, electrical networks, pneumatic devices, and hydraulic elements. Prerequisites: Physics 5C, Mathematics 3C, Information and Computer Science 1 (may be taken concurrently).

101A-B-C Continuous Media and Fields (1-1-1) F, W, S
Scalar and vector fields and methods of solving boundary value problems. Examples are drawn from electromagnetic, heat conduction, and fluid fields. Prerequisites: Physics 5E, Mathematics 3C.

104A-B-C Engineering Design (1-1-1) F, W, S
Specifications, natural constraints, and optimization; optimization topics, calculus of variations, Lagrange multipliers, steepest descent, linear and nonlinear programming methods; reliability theory and practice; system simulation methods; annual design project. Prerequisite: Engineering 100C.

105A-B-C Engineering Measurements (1-1-1) F, W, S
Experimental procedures, including instrumentation, measurements, simulation, modeling and design. Prerequisites: Engr. 100 and 101 (may be taken concurrently).

110A-B-C Electronics (1-1-1) F, W, S
Properties of semi-conductors, junction diodes and transistors, the band theory of semi-conductors, small signal transistor amplifiers, wave forming and shaping cir-

cuits, pulse circuits, linear operational amplifiers, and integrated circuits. Prerequisite: Physics 5D.

113A-B-C Analysis and Design of Integrated Circuits (1-1-1) F, W, S
Monolithic and hybrid circuit design, processing and fabrication. Integrated circuit packaging. Basic semi-conductor principles. Large signal models. Bipolar and MOS logic circuits, small-signal models linear circuits, thin/thick film analysis and design. Computer-aided design of integrated circuits. Prerequisite: Physics 5C.

***115A-B-C Systems Engineering** (1-1-1) F, W, S
Definition of the systems engineering process and its interface with operations research. Emphasis placed upon those mathematical optimization techniques and probability theory concepts which find application during the design, development, and evaluation of systems. Prerequisites: Engineering 187, 188, or Mathematics 130A-B-C.

116 Engineering Economy (1) F
Economic analysis of engineering projects and alternatives; utility and decisions; time cost of money. Long range planning in the private and public sectors. Optimal resource allocation. Case Studies.

117 Mathematical Methods of Systems Reliability (1) F
Statistical and probabilistic aspects of reliability engineering. Discussion of series, parallel and combination systems. Analysis of systems with dependent components. Majority voting, redundant codes, adaptive schemes and redundancy in digital systems. Reliability models and statistical parameter estimation. Analysis of multi-mode systems with drift, marginal, catastrophic failures. Prerequisite: Engineering 186.

118A Deterministic Models in Operations Research (1) F
Optimization of deterministic systems. Formulation of models and applications. Linear programming and extensions.

118B Nonlinear and Multistage Models in Operations Research (1) W
Quadratic and nonlinear programming methods. Modeling of multistage processes and optimization by dynamic programming methods. Analytical and computational methods of solution.

118C Stochastic Models in Operations Research (1) S
Optimization of stochastic systems. Formulation and application of stochastic programming, probabilistic dynamic programming. Markov chains and waiting line models. Inventory models. Prerequisite: Engineering 186.

119A-B-C Power System Engineering (1-1-1) F, W, S
Generation, transmission, and use of electrical energy. Stability, reliability, economics and optimal load flow. Prerequisites: Engr. 100 and 101.

122 Logic and Organization of Digital Computers (1) F
Digital computer organization. Representation of information and information processing algorithms; formal representation of digital systems; logic components, building blocks, internal algorithms, and programming systems. Prerequisite: Information and Computer Science 1.

123A-B Computer and Systems Programming (1-1) W, S
Machine language programming and systems programming from the point of view of the computer system architect. Addressing techniques, assembly systems, sorting and converting data, program segmentation and linkage, service programs, supervisors, schedules, and translators. Prerequisite: Engineering 122.

124A-B Switching Circuits and Computer Logic (1-1) W, S
Switching circuits for computers, representations (codes, geometric forms); implementation (switching networks, storage elements), and digital systems. Characteristics of combinatorial and sequential networks. Prerequisite: Engineering 122.

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135A-B-C Electromechanics (1-1-1) F, W, S
Theory and behavior of electromechanical devices when used in systems as modulators of electrical power, conversion of information processing devices. Prerequisites: For Egr. 135A, Egr. 101C; For Egr. 135B and Egr. 135C, Egr. 135A (note that 135B is not a prerequisite for 135C).

138A-B-C Masers, Lasers, and Modern Optics (1-1-1) F, W, S
Maser and laser devices and their applications in optical systems. Spontaneous and stimulated emission, optical spectra, and laser devices. Interference and coherence. Diffraction theory and optical resonator. Theory of dispersion and crystal optics. Modulation and detection. Prerequisite: Engineering 101C or Physics 112B.

140 Continuous-Time Linear Feedback Systems (1) F
Analysis and design of continuous-time linear feedback systems. Modeling, stability criteria, and design specifications. Root locus, Nyquist, Bode, gain-phase and computer-aided techniques. Associated laboratory exercises. Prerequisite: Engr. 100C

141 Digital Linear Feedback Systems (1) W
Analysis and design of digital linear feedback systems. Sampling, quantizing, and z-transform theory. Schur-Cohn and Nyquist stability criteria. Design using root locus, Nyquist, Bode, gain-phase, and computer-aided methods. Computer-controlled systems. Prerequisite: Engr. 100C.

142 Vector Space Methods in System Analysis (1) S
Application of the theory of finite-dimensional linear vector spaces to the analysis of linear dynamic systems. Lyapunov stability theory, controllability and state variable feedback, observability and observer theory. Computer-aided analysis of linear systems and introduction to optimal control. Prerequisite: Engr. 100C.

143A-B-C Simulation and Computation (1-1-1) F, W, S
Computers for modeling engineering systems and for simulation experimentation in systems engineering and operations research. Analog, digital and hybrid simulation systems, software and applications. Error analysis for analog, digital and hybrid simulations. Prerequisite: Engr. 100C.

145 Engineering Statistics (1) S
Introduction to Statistical Inference; Point Estimators, Bias, Sufficiency, Consistency; Interval Estimators, Confidence Intervals; Hypothesis Testing, Simple and Composite Hypotheses, Likelihood Ratio Tests; Regression; Nonparametric Methods; Sequential Tests; Applications to Engineering Problems. Prerequisite: Engr. 186, Basic Probability Course.

***146A-B Orbital Mechanics** (1-1) F, W
Application of celestial mechanics and allied fields to the navigation, guidance, and control of space vehicles and to related classical problems in astronomy.

147 Engineering Mechanics (1) W
Analytical treatment of rigid body dynamics in three dimensional spaces. The use of nonorthogonal coordinates. Advanced methods in dynamics (generalized coordinates, Lagranges equation, etc.). Analysis of complex dynamical systems. Theory of oscillations. Prerequisite: Engineering 100B.

150A-B-C Structural Mechanics (1-1-1) F, W, S
Analysis of structural members including beams, columns, trusses, and rigid frames. Design of steel and reinforced concrete structures. Ideal truss analysis, shearing force and bending moments for beams, deflection (due to axial, bending shearing, and torsional deformations), statically indeterminate structures.

155 Fluid Mechanics (1) F
Fluid mechanics with emphasis on incompressible fluids. Fundamental equations and conservation relations, stresses in fluids, similitude, potential flows, turbulence, lami-

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*Offered 1972-73.

nar and turbulent boundary layers, creeping motion, separation wakes. Applications to pipe flow, open channel flow, and hydraulic models. Prerequisite: Engineering 101C.

156 Compressible Flow (1) S
Inviscid channel flow, Fanno, and Rayleigh flows. Oblique shock waves, detached shock waves, external linearized supersonic flows, hypersonic approximations and implications of viscosity. Prerequisite: Engineering 101C.

161 Introduction to Environmental Science and Engineering (1) F
Basic principles of population growth, meteorology, hydrologic cycle, components of water and waste systems, air and water quality, and public health in relation to environmental planning and pollution control.

***162 Water and Waste Systems** (1) W
Analysis and design of water and wastewater collection and transmission systems. Fluid dynamical aspects of dispersion of pollutants in the atmosphere and in water environments. Prerequisite: Engineering 101B.

163 Water Pollution and Control (1) S
Chemical and biological aspects of water, water supply, wastewater treatment, and solid waste management.

164 Air Pollution and Control (1) W
A course for science and engineering majors on formation, sources, control, effects and political considerations of air pollution and control.

170 Engineering Thermodynamics (1) W
Classical thermodynamics applied to closed and open systems of engineering interest. First and second laws of thermodynamics, equation of state and thermodynamic properties, concepts of equilibrium and reversibility, and consideration of nonreacting and reacting mixtures.

171 Heat and Mass Transfer (1) S
Transport of mass and heat in both steady and unsteady flow systems, including mass diffusion and heat transfer in laminar and turbulent flow.

186 Engineering Probability (1) F
Sets and set operations; nature of probability, sample spaces, fields of events, probability measures; conditional probability, independence, random variables, distribution functions, density functions, conditional distributions and densities; moments, characteristic functions; random sequences, independent and Markov sequences. Prerequisite: Math 3C or Engr. 100A (may be taken concurrently).

187 Random Processes and Systems Theory (1) W
Applications of the theory of random processes to the analysis of the response of linear systems, linear mean-square optimization, the orthogonality principle and Wiener-Hopf theory. Prerequisite: Engr. 186.

188 Random Processes in Nonlinear Systems (1) S
The application of diffusion theory to the representation and determination of the output processes of systems driven by independent increment processes. The interpretation of stochastic differential equations as integral equations defined in a mean-square sense. Prerequisite: Engineering 187.

198 Group Studies for Undergraduates (1) F, W, S
Group study of selected topics in engineering.

199 Individual Study (.5 or 1) F, W, S
For undergraduate engineering majors in supervised but independent reading or research of engineering topics of current interest.

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*Offered 1972-73.

Graduate Courses in Engineering

***210 Fourier Optics** (1) W
Fourier integral representations of spatial signals. Plane-wave expansions. Diffraction theory. Fourier transforming and imaging properties of lenses. Spatial-frequency analysis of optical systems. Spatial filtering and optical information processing. Holography. Prerequisite: Engineering 101C.

***211 Theory of Partial Coherence** (1) S
Statistical description of fields. Mutual coherence and mutual spectral density. Response of linear optical systems to partially coherent fields. Quasi-monochromatic fields. Incoherent sources. Optical imaging with partially coherent light. Optical detectors and photo-count statistics. Heterodyne detection. The Brown-Twiss effect. Prerequisites: Engineering 210, 186 (may be taken concurrently).

213A-B-C Quantum Electronics (1-1-1) F, W, S
Quantum theory of electromagnetic field, interaction of radiation with matter and coherence properties of radiation based on density matrix techniques. Laser dynamics and spectroscopy of laser materials. Nonlinear optical processes with applications to optical electronic devices and systems. Prerequisites: Engineering 138C and Physics 130, 131.

218A Advanced Linear Programming and Extensions (1) F
Theoretical foundations of the simplex method and its variants. Duality relationships. Postoptimization techniques, upper bounding, and decomposition. Complementarity. Discrete programming. Applications and computer usage. Prerequisite: Engr. 118A.

218B Theory of Nonlinear Programming (1) W
Convex sets. Convex and concave functions. Constraints. Criteria. Conditions of optimality. Convergence criteria. Duality and transformations. Geometric programming.

218C Algorithms for Nonlinear Programming (1) S
Optimization methods which can be implemented on digital computers. Single variable search. Multivariable search techniques. Gradient methods. Conjugate directions. Constrained optimization. Computational aspects. Applications to problems in design and control.

***219A Production and Inventory Control** (1) W
Optimal policies for multistage dynamic processes. Discrete and continuous time models. Deterministic and stochastic models. Exact solutions and heuristic methods. Applications.

***219B Applied Stochastic Processes and Queueing Theory** (1) S
Application of stochastic processes to the study of the characteristics of queueing and replacement models and their optimization. Prerequisite: Engr. 186.

***221A-B Trainable Automata** (1-1) W, S
Markov chain models of learning phenomena in pattern recognizing machines and human signal detection, train-work scheduling, single-operator model, convergence properties of training algorithms, training without a teacher, game-theoretic iteration; adaptive sample set construction; stopping rules, time-varying training proceduces. Prerequisites: Mathematics 130C or Engineering 187.

222 Statistical Pattern Classification (1) F
Design of machines which sort sets of statistically generated observations into classes. Examples of such observations are speech, radio signals, and electrocardiograms. The techniques discussed include decision theory, divergence, feature selection, cluster analysis and prototype decisions. Prerequisite: Math 130A-B-C or Engr. 186.

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*Offered 1972-73.

223 Image Processing by Computer (1) W
The theory and design of machines that analyze and process visual images. Topics discussed include spatial computers, two-dimensional digital filters, chain codes, distance skeletons, and slope density analysis of silhouettes, noise removal and image enhancement. Prerequisite: Engr. 122.

224 Describing Pictures in Computers (1) S
The use of linguistic techniques for implementing picture analysis and recognition on computers. Topics include array grammars, phrase structured grammars, web grammars, graphs, and analysis of texture. Prerequisite: ICS 130B or Engr. 122.

***227A-B Detection, Estimation and Demodulation Theory** (1-1) F, W
Application of statistical decision theory, state variable theory, random processes and the Ito calculus to deriving optimum receiver structures for signal detection, parameter estimation and analog demodulation. Prerequisites: Engineering 187.

228A-B Communication and Information Theory (1-1) F, W
Communication over additive gaussian noise channels via optimum receiver design and signal selection. Important communication channel models and waveform communication. Information theory concepts — entropy, mutual information, encoding of information. Shannon's coding theorems, channel capacity, and implementation of some coded systems. Prerequisites: Engineering 186, 187.

240 Optimal Control Theory (1) F
Formulation of optimal control theory for deterministic systems. Necessary and sufficient conditions for optimal control systems. Pontryagin's maximum principle. Dynamic programming. Prerequisite: Engr. 142.

241A Stochastic Control Systems (1) W
Second order random processes, Markov processes, shaping filters. Linear estimation theory, sequential estimation and estimation errors, error analysis for stationary and non-stationary systems. Discrete time and continuous time processes are considered. Prerequisite: Engr. 186.

241B Stochastic Optimal Control (1) S
Nonlinear Stochastic difference and differential equations, stochastic calculus, optimal Bayesian estimation and control, Fokker-Planck type equations for estimation and control. Prerequisite: Engr. 241A.

255A-B-C Hydrodynamics (1-1-1) F, W, S
The mechanics of viscous and inviscid fluid motion with emphasis on incompressible fluids. Laminar flow; Stokes and Oseen problems, laminar boundary layer, diffusion of vorticity, laminar instability; potential flow, conformal mapping, surface waves, perturbation theory, jets, stability; turbulence, Reynolds stresses, turbulent boundary layer, phenomenological theories. Prerequisite: Engr. 155.

***258A-B Flow in Open Channels** (1-1) F, W
Mechanics of fluid motion in open channels. Steady uniform and non-uniform flow, channel controls and transitions, unsteady flow, method of characteristics, flood waves, roll waves, numerical methods, models, flow over movable beds, sediment transport. Prerequisite: Engineering 155.

263A-B-C Advanced Water and Air Resources Technology (1-1-1) F, W, S
The essential aspects of advanced water, waste, and air pollution control. Flow through porous media. Dispersion and turbulent diffusion of pollutants. Fundamental aspect of combustion and water chemistry. Physical, chemical, and biological treatment for gases and waste of waters. Control of air pollutants from combustion sources. Reuse of wastes. Ultimate disposal of non-reusable wastes. Prerequisites: Engr. 163, 164, 101B.

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*Offered 1972-73.

265 Water and Air Treatment Chemistry (1) F
Inorganic and organic chemistry of water, wastes, and air pollutants. Chemistry of natural waters, quality changes from contact with soil, supersaturation, phenomenons and complex equilibria chemistry of organic pollutants including pesticides and combustion products. Laboratory will emphasize theory and practice of analytical procedures. Prerequisites: Chemistry 1A-B-C, Engineering 161.

266 Public Health Aspects of Environmental Engineering (1) F
Public health aspects of water engineering. Aquatic microbiology. Virology. Bacteriological water quality standards. Water-borne diseases. Principles of epidemiology and toxicology. Airborne diseases. Prerequisites: Biology 100A-B-C.

268A-B-C Environmental Resources Systems — Planning, Design, and Evaluation (1-1-1) F, W, S
Fundamentals of planning small and large civil engineering systems. Emphasis on optimization of integrated water reuse systems and transportation systems. Qualitative and quantitative design criteria for public works. Economic evaluation of alternative systems. Prerequisites: Engineering 263A-B-C (may be taken concurrently).

285A-B-C Methods of Engineering Analysis (1-1-1) F, W, S
The development of the theory of operators in linear vector spaces as a general tool for the analysis of engineering systems. The course will develop a unified mathematical approach applicable to problems in all fields of engineering. Prerequisites: 100C, 101C.

298 Group Studies or Seminars (varies) F, W, S
Group studies on various subjects related to engineering given through seminars on topics to be selected each quarter. Prerequisite: consult section instructor.

299 Individual Research (varies) F, W, S
Individual research or investigation under the direction of an individual faculty member. Prerequisites: determined by instructor.

Interschool Curricula

These curricula are programs that grant degrees but are not under any of the regular schools at UCI. They are independent programs and are not interrelated in any way. There are no "school requirements" for the Bachelor's Degree in any of the Interschool Curricula programs; the requirements for a degree are specified by each program as described below.

PROGRAM IN COMPARATIVE CULTURE

"Culture" may be defined as that complex whole of knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society. "Culture" refers to the distinctive ways of life of a "society," a group of people who have learned to work together. Society is made up of individuals; culture is made of what happens in their consciousness, in their emotions, and in their habits of behavior. The crucial changes taking place in "society" very often first take place in "culture," which lies behind society in providing its motives and methods.

Recently, a rebellion against departmentalized knowledge has been one of the most remarkable developments in American universities. The possibilities of cooperation between disciplines have been tested and developed in many areas. The study of culture has in common with the development of collaborative study in other areas the conviction that interdisciplinary investigation is essential. We who study culture comparatively believe, first, that a particular civilization or culture, with all its diversity, has a certain underlying homogeneity which can serve as a unifying key to the interpretation of diverse phenomena within this particular culture; and, second, that intercultural or cross-cultural study of cultures illuminates both the peculiarities of any culture and also the connections between cultures.

The program in Comparative Culture conducts cultural investigation by: (1) drawing together techniques from separate disciplines of the schools and departments of the University; (2) focusing on the character of single cultures or cultural styles; and (3) illuminating the particularities of any culture by studying it cross-culturally — i.e., through the perspective of other cultures.

Thus, the major for the B.A. in Comparative Culture will (1) gain competence in interdisciplinary inquiry by becoming acquainted with the methods of all the schools at UCI; and he will focus these methods upon the consideration of problems best identified and solved by the use of interdisciplinary, cross-cultural, and multi-cultural methods of study; (2) concentrate on the study of one culture; and (3) take, comparatively, course work in the study of other cultures.

Degrees Offered

American and Comparative Culture . . . . . Ph.D.

Comparative Culture . . . . . B.A.

Undergraduate Program

Requirements for the Bachelor's Degree in Comparative Culture

University Requirements: See page 23. Students are encouraged to complete their breadth requirements by the end of their sophomore year.

Program Requirements for All Majors

(1) Compulsory consultation with faculty advisor at each registration period; advisor's approval is required; (2) eight quarters of course work in one culture; (3) four quarters of course work in one other culture; and four quarters of work in any combination of courses in the program; (4) Comparative Culture 1, an introduction to the study of culture—its evolution and nature as the primary determinant of human behavior. Emphasis is upon the comparative analysis of cultural systems, with particular attention to similarities, differences, and relationships among the cultures represented in the Program in Comparative Culture. Required of all Comparative Culture majors; prerequisite to the major. To be completed by the end of the sophomore year; (5) Comparative Culture 10. Under this number are listed introductory courses to each culture represented in the program; (6) See also specific requirements for concentration under the listing for each culture.

Planning a Program of Study

The cultures represented in the Program for concentration are African Culture, American Culture, Asian Culture, Black Culture, and Chicano Culture. Other areas of culture study — Latin American Culture, Comparative Literature, Classical Civilization, Russian Culture, for instance — may be taken as comparative areas (but not areas of specialization) in the major.

The student will design his own program within these. His advisor will supervise his selection of courses each quarter. Should he be interested in ethnic minorities in American culture, for instance, he would probably take courses in American Culture, Black Culture, and Chicano Culture; or should his interest lie with Third World Culture, he would study Asian Culture, African Culture, Black Culture, or Latin American Culture. He will also satisfy the special language or other requirements of the program in which he specializes.

Graduate Program

Requirements for the Ph.D. in American and Comparative Culture

Students will be admitted beginning in fall, 1971. The Ph.D. program emphasizes work centering on American culture and allows specialized work in two areas:

(1) Literature and the Arts or

(2) History and Social Science.

In either of these areas, students may choose to emphasize minority-group cultures.

The Ph.D. program grows out of the undergraduate Program in American Culture, with aid from the Programs in Black and Chicano Culture. Its faculty will offer graduate courses and supervise graduate work, aided by associated faculty in other departments. A graduate student's pattern of course work will be designed and guided by the graduate director and will include a core course for American and Comparative Culture students plus course work appropriate to the individual's program in each of six quarters (eighteen courses). A four-man committee will design qualifying examinations. The prospectus for the dissertation and the dissertation itself will be supervised by an appropriate four-man committee. (Both will include at least one non-departmental member.)

The student will become competent in one foreign language (in all cases with a reading knowledge, and for some programs with speaking facility) and will study either one other language or linguistics, statistics, or computer science, as appropriate to a pattern of study.

Candidacy procedures are those approved by the Irvine Division of the Academic Senate.

Student Participation in Academic Affairs

Comparative Culture majors elect eight representatives (one representing each of the five culture areas in which specialization is possible and three members at large). One student is appointed to the departmental Executive Committee. In every case, except personnel decisions and those reserved to faculty by the Program's Constitution, the students have full voting privileges. Students, moreover, have authority in: (1) Evaluation of faculty teaching reports and (2) student discipline.

Comparative Culture Faculty

Jay Martin, Ph.D. Ohio State University, *Professor of English, Comparative Literature, and Comparative Culture, and Director of Program in Comparative Culture*

Sandra Barkan, M.A. University of California, Los Angeles; Makere University College (Uganda); *Lecturer, African Literature*

Joseph Bell, B.A. University of Missouri, *Lecturer, English and Comparative Literature*

Dickson Bruce, Ph.D. University of Pennsylvania, *Assistant Professor of History and Comparative Culture*

Pete Clecak, Ph.D. Stanford, *Assistant Professor of English and Comparative Culture*

Raul Fernandez, Ph.D. Claremont Graduate School, *Assistant Professor of Economics and Comparative Culture*

James Flink, Ph.D. University of Pennsylvania, *Associate Professor of History and Comparative Culture*

J. Patrick Haithcox, Ph.D. University of California, Berkeley, *Associate Professor of Political Science and of Comparative Culture*

George Kent, Ph.D. University of California, Berkeley, *Associate Professor of Intellectual History and Comparative Culture*
Lucille Kuehn, M.A. University of California, Irvine, *Lecturer, Comparative Culture*
May E. Loh, B.A. National Central University (Chungking, China), *Lecturer in Chinese Language*
Oliver L. E. Mbatia, Ph.D. Oregon State University, *Assistant Professor of Economics and Comparative Culture*
Carlton Moss, *Lecturer*
Carlos Munoz, M.A. Claremont Graduate School, *Acting Assistant Professor of Comparative Culture*
George O. Roberts, Ph.D. Catholic University of America, *Professor of Sociology and Comparative Culture*
G. Singh, M.A. Mahendra College (Punjab University), and Punjabi University, *Teaching Assistant in Comparative Culture*
Louis Smith, *Lecturer*
Dickran Tashjian, Ph.D. Brown University, *Assistant Professor of English and Comparative Literature and Comparative Culture*
Sharlie Ushioda, M.A. Harvard University, *Lecturer*
Joseph L. White, Ph.D. Michigan State University, *Professor of Psychology and Comparative Culture*
Kenny Jackson Williams, Ph.D. University of Pennsylvania, *Visiting Professor of Comparative Culture*

Courses in Comparative Culture

Under Comparative Culture numbers the program lists a variety of courses which concentrate on methods for cross-cultural study and special studies in cross-cultural analysis.

1A-B Man in Cultural Perspective (1-1) F, W
An introduction to the study of culture — its evolution and nature as the primary determinant of human behavior. Emphasis is upon the comparative analysis of cultural systems, with particular attention to similarities, differences, and relationships among the cultures represented in the Program in Comparative Culture. Required of all Comparative Culture majors; prerequisite to the major. To be completed by the end of the sophomore year.

5A-B-C Formation of Modern Society (1-1-1) F, W, S
Same as History 29A-B-C. Presents a unified view of the histories of Europe, the United States, and Latin America focusing on the general social transformation from traditional to modern society. Stress will be placed on comparative structural analysis with the intent that the students acquire an understanding of how advanced industrial society has evolved. Special reference will be given to significant problems of historical interpretation.

10 Introductions to Culture Study (1) S

Section A. Introduction to African Culture
Section B. Introduction to American Culture
Section C. Introduction to Asian Culture
Section D. Introduction to Black Culture
Section E. Introduction to Chicano Culture

Introduction to the cultures represented in the Program. Each will present a general overview of the nature of a particular culture, its patterns of behavior, its

characteristic assumptions, its modes of preserving continuity and facilitating change. These are designed to follow Comparative Culture 1; each student is required to complete at least one in the spring, following his completion of Comparative Culture 1. He may take as many others as he wishes to elect thereafter. Prerequisite: Comparative Culture 1A-B or consent of instructor.

100A Women in Culture (1) F
Study of the role of women in American society and comparison to women's roles in other cultures. Female indentity and socialization. Anthropological perspectives on the family and sex roles. History of the women's movement and issues of women's liberation.

100B Women in Literature (1) W
Significant works of literature about and/or by women will be evaluated against the period of history in which they were written. The cultural, ethnic, social, and later psychoanalytical milieu of the period will also be explored for their impact on the roles of women developed through literature by: Mary Wollstonecraft, John Stuart Mills, Henrik Ibsen, Charlotte Grimke, Margaret Sanger, Eleanor Roosevelt, Karen Horney, Andre Maurois, Christopher Lasch, Kate Millet, Norman Mailer and Erich Segal.

100C Special Studies in the Status of Women in Culture (1)S

101A-B-C, Contemporary Jewish Culture (1-1-1) F, W, S
Same as Social Science 176A-B-C.

102 Statistics for Culture Study (1) F
A survey of the interpretation of statistical reports and other documents related to the analysis of culture. Strongly recommended for all majors in Comparative Culture.

103A Comparative Economic Ideas and Systems (1) F
An introduction to contemporary economic thinking; the historical development of economic analysis; the development of industrial capitalism: philosophical and political issues in economics. Prerequisite: One quarter of economics or consent of instructor.

103B Comparative Economic Ideas and Systems (1) W
Introduction to Marxist economic theories and other orthodoxies; discussion of specific economic systems: capitalism, socialism, etc. Prerequisite: 103A.

104 A Case Study in Cost-Benefit Analysis (1) W
The tools of cost-benefit analysis are used to explore the virtues of different programs for the rehabilitation of drug addicts. Prerequisite: one quarter of economics.

105 Political Economy of the Third World (1) S
Economic, political, and cross-cultural analysis of contemporary problems of colonialism, "underdevelopment" and racism in the third world countries and in the U.S.A. Prerequisite: consent of the instructor.

106 Seminar on Contemporary Critiques of Economics (1) S
An exploration of the "scope and method" of economics in the light of current "radical," "interdisciplinary," and other critiques of the discipline. Prerequisite: two quarters of upper-division economics or consent of the instructor.

107 Urban Politics (1) Summer 1971, F
A systematic analysis of the nature and the future of the urban crisis. The emphasis will be on the politics of poverty, race, and social change. Prerequisite: consent of instructor. May be taken only once for credit.

108 Mysticism and Problematic Man (1) F
Mysticism as an aid to self-consciousness, hyper-consciousness, harmonious living, studies in Zen, Hindu, Christian mysticism, recent developments in Existentialism, Freudianism, psychotherapy.

109 Minority Movements in America (1) W
A comparative political-sociological analysis of movements in Ethnic America. Emphasis on the Chicano, Black, Asian, and Native-American minorities. Open. Lecture-Discussion.

African and Comparative Culture

The continent of Africa and her peoples have recently come into global prominence for various reasons other than the traditional view that they provided a sector for economic and societal exploitation. With the discovery of Professor Leakey's *Homo habilis* in 1964 Africa won recognition as the ancestral origin of man and the historical source of the universality of human brotherhood. The emergence of modern nations on the continent, on the other hand — especially those controlled by previously-colonialized Africans — provided an interracial climate for contemporary international relations, as well as a stimulant for a regenerated "pride in blackness." Furthermore, the global implications of the contest among developmental ideologies — capitalism, communism, socialism, and humanism — have kept Africa and her people (be they in Algeria, Nigeria, or Nambia) in sharper focus. In spite of the foregoing, however, there are many students who lack the information necessary for an accurate assessment of the impact of the historical and contemporary realities of Africa upon their lives and the values they cherish and abhor. It is, in part, to correct this void, as well as to contribute to a more comprehensive curriculum in higher education, that this dimension to the study of human relations is offered.

The established disciplines, such as economics, political science, history, literature, and sociology, will serve as the basis for the study of Africa; it is hoped, however, that an interdisciplinary approach will be encouraged so as to strengthen designs for depth and supplementary analyses from the focus of any one academic discipline or combination of disciplines.

Requirements for the Concentration in African Culture

(A) Satisfaction of Comparative Culture Program requirements.
(B) Concentration in any one discipline (history, physics, literature, drama, etc.) in at least six upper-division courses.
(C) Two years competence of a vehicular African language (indigenous or foreign).
(D) Completion of course Senior Seminar on Africa.

Courses in African Culture

100 Social Structure and Change in Sub-Sahara Africa (1) F
Comparative analysis of societies in "Black" Africa which have recently gained their independence from colonial rule.

***101 History of West Africa** (1)
A survey of the major events and personalities which influenced the nature of social organization and change in the region of the ancient empires of Ghana, Mali, and Songhay before 1945.

102 Social Structure and Change in the Middle East (1) W
Survey of the impact of religion, politics, colonialism, and acculturation upon developments in the Middle East since 1914.

***103 Southern Africa and Human Rights** (1)
Examination of the history and contemporary significance of restrictive social norms in South Africa, Rhodesia, Angola, and Mozambique.

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*Not offered 1971-72.

104 History of Eastern Africa (1) S
Survey of the major events and personalities which influenced the nature of social organization and change in Eastern Africa before 1945.

***105 Race and Ethnic Relations in Africa** (1)
An analysis of the nature and consequences of relations among racially different populations in Africa. Focus will be upon the impact of racial visibility upon economic and political participation and upon social stratification in selected communities.

***106 Economic Geography of Africa** (1)
A survey and analysis of the natural resources of Africa, in light of the problems posed by the physical and human factors of geography to their development and distribution.

107A Introduction to African Literature (1) F
The course is designed to introduce students to both the oral traditions and written literature of sub-Saharan Africa. When examining the works of major contemporary authors, discussion will center around the political and social themes in the literature.

107B The Novel in French-Speaking Africa (in translation) (1) W
A study of the evolution of the novel in French-speaking, sub-Saharan Africa. Traditional literature and contemporary literary movements such as Negritude will be considered in terms of the influence they have had on the novel. Translated versions of novels by major authors will be read and discussed.

***111 Social Structure and Change in the Maghreb** (1)
Comparative analysis of societies in North Africa which achieved independence from colonial rule after World War II.

***112 Africa and the Question of Israel** (1)
An examination of the sovereignty of Israel in light of the challenges it poses to African nations and their commitments in both the Arab League and the Organization of African Unity.

***113 Contemporary Nigerian Literature** (1)
Contemporary Nigerian literature, its development and scope, will be explored. Nigerian novels, poetry and drama will be studied in depth. Emphasis will be placed on the works of John Pepper Clark, Chinua Achebe, Wole Soyinka, T. M. Aluko, Elichi Amadi and others.

114 Senior Seminar on Africa (1) F
Foreign aid and Socio-Cultural Change: The Experience of new nations in West Africa. (Open to seniors in African Culture only.) Topics in this seminar will change annually. Required of seniors concentrating in African Culture.

118 Peasant Rebellions and Revolutionary Movements in Africa (1) S
Historical reaction of Africans to imposition of colonial rule; indigenous organized resistance; modern movements to correct inequities in dependent states.

119 Politics in Black Africa (1) S
Same as Social Science 134N.

199 Individual Study (1-1-1) F, W, S

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*Not offered 1971-72.

American and Comparative Culture

Each student in either lower or upper division will be assigned an advisor whom he will be required to consult every quarter for approval of his academic schedule. A 2.0 grade point minimum in lower- and upper-division courses is a degree requirement for the Program.

Lower-Division Requirements

During his first two years each student will ground himself in areas that will lead toward a broadly comparative study of American culture. The prerequisite for upper-division continuance in the major is Comparative Culture 1. Each student will also be required to have a competence equivalent to two years of college work in a single foreign language as well as to complete, upon advisement, the University breadth requirements by the end of his sophomore year.

Upper-Division Requirements

American and Comparative Culture is conducted through programs, problem posing, and problem-solving in subjects and areas particularly suited to interdisciplinary and multi-cultural methods of inquiry. Each student will take eight courses from the following in American Culture: 101A-B-C American Arts, 102A-B American Communities, 107A-B-C American Literature, 104A-B American Ethnography; or other courses the Program may designate. Upon advisement, additionally, he will select eight courses from two of the following disciplines: fine arts, literature, history, social science, or philosophy. Exceptions to these requirements must be cleared through a formal petition to the faculty of Comparative Culture.

Undergraduate Courses in American Culture

101A-B-C American Arts (1-1-1) F, W, S
Each quarter the same as one section of Comparative Literature 104. Each quarter is devoted to a study of the relationships between American literature and the visual arts out of the commonality of cultural experience. The material is organized in a chronological sequence, so that the fall quarter emphasizes the literature and art of early New England, the winter quarter explores nineteenth-century cultural expression, and the spring quarter considers twentieth-century works of literature and painting. Entrance by consent of instructor is the only prerequisite.

102A American Communities (1) W
Same as History 168A. A study of the American community from both historical and cross-cultural perspectives. Emphasis is upon the historical development of various forms of community life in American civilization and upon comparison of these forms of community life with one another and with selected forms of community life found in other cultures. Entrance by consent of instructor only.

102B American Communities (1) S
Same as History 168B. An interdisciplinary examination of American community culture and American attitudes toward community in the twentieth century. Entrance by consent of instructor only. Prerequisite: American Communities 102A.

104A Nineteenth-Century American Ethnography (1) W
Same as History 178A. Examination of major interpretations of American society and culture from the Revolution to the late nineteenth century with emphasis upon intersectional differences and similarities and the emergence of a distinctively American national character.

104B Twentieth-Century American Ethnography (1) S
Same as History 178B. Examination of the major interpretations of modern American society and culture with emphasis upon the impact of urbanization and industrialization upon traditional lifeways and the interrelationships among contemporary institutions. Entrance by consent of instructor only.

***105 Literature and Society** (1)
Same as Comparative Literature 104. The course will be an introduction to the argumentative and rhetorical forms of social criticism and their dominant political, social, and psychological function in postwar America. Some of the following critics will be considered: Paul Baran, Paul Sweezy, C. Wright Mills, Herbert Marcuse, Irving Howe, Daniel Bell, David Riesman. This course is primarily for sophomores, though others may be admitted with the consent of the instructor. It will also serve as an introduction to the major in social criticism.

107 20th-Century American Prose Fiction (1) F
Studies in the major American novelists between 1900 and the present time. (Same as English 103, Sec. D).

***108 The Limits of Reform in Modern America** (1)
Same as History 170. An examination of the rise of corporate liberalism both as a political ideology and an obstacle to fundamental change. Primary focus on Progressivism, the New Deal, the Fair Deal, the Great Society, and on domestic militarism during the cold war.

110 American Intellectual History (1) F
Same as History 174. A study of the major ideas, belief-systems, and values in American intellectual history. Special emphasis on the "Americanization" of such European philosophies as Calvinism, Rationalism, Idealism, Darwinism, Freudianism, and Existentialism. Students are expected to have some background in either literature, philosophy, political theory, or theology.

112 The Motion Picture in Contemporary American Society (1) S
An examination of the commercial motion picture including: a brief history of its social and economic development; how and by whom theatrical films are made; the motives, machinations, and techniques of filmmakers in the creation, distribution, and promotion of commercial motion pictures; the contributions and special problems of the various types of people involved in modern filmmaking. Guest lecturers from the film industry–producers, directors, administrators, actors, publicists, critics—will screen and comment on their own films from the vantage point of their area of expertise, and this will then be related to the formation of social attitudes in the United States. Two papers on student-selected subjects relating to the general thesis of the course will be required.

113 New American Art (1) S
This course has three general aspects: (1) Actual artists and the art scene—the later fifties on. Pop Art, Minimal Art and Conceptual Art. (2) The whole structure of the art world—museums, galleries, and critics—how they affect (and in a sense dictate) the art. (3) Alternatives to the museum system and to the present art.

114 Hawthorne and James (1) F
Same as English 103, Sec. B.

198 Sec. A Whitman and Dickinson (1) F
Same as English 103, Sec. C.

198 Sec. B 20th Century (1) F

199 Individual Study (1-1-1) F, W, S

Graduate Courses in American Culture

200A-B-C Theory and Methods for the Interdisciplinary Study of American Culture (1-1-1) F, W, S
Three quarter core course seminar which must be taken in sequence. First quarter deals with qualitative techniques for the analysis of cultural data: historical docu-

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*Not offered 1971-72.

ments, literary works, and artifacts. Second quarter studies the uses of social science concepts and theory in the study of history, literature, and the visual arts. Third quarter is an examination of major interdisciplinary interpretations of American culture. Prerequisite: consent of instructor.

201A-B-C Images and Manifestations of Socialism (1-1-1) F, W, S
An historical and critical survey of socialist theory from (roughly) the Enlightenment to the present. The main focus will be on the inter-play among socialist ideals, ideologies, and politics in America and in selected parts of the socialist world. Readings will center on the Marxian tradition, and the primary concern will be to understand the nature and prospects of socialism in the seventies; Soviet socialism; Chinese socialism; and the historical possibilities of a democratic "socialism with a human face."

202A Chicago Writers and Architects, 1890-1920 (1) F
Studies in the culture and environment which produced a certain kind of construction in buildings and in fiction.

210, Sec. A Modern American Poetry (1) F
Same as English 210, Sec. A.

210, Sec. B Theory and Practice of Literary Biography (1) F
Same as English 210, Sec. B.

220A-B Historiography
Same as History 200A-B. Prerequisite: consent of instructor.

230A-B-C Literature and Interpretation of American History
Same as History 270A-B-C.

235A-B Seminar in American History
Same as History 275A-B.

299 Directed Reading (1-1-1) F, W, S

Asian and Comparative Culture

Basic Requirements for the Concentration in Asian Culture

(a) The introductory course in Chinese-Japanese Civilization (Asian Culture 100A-B-C) or the equivalent.

(b) At least six courses in Chinese or Japanese language. (A student specializing in language or literature would be expected to take more than six courses.)

(c) At least four additional upper-division courses in Asian Culture. The student concentrating in Asian Culture would be encouraged to take such other courses pertaining to Asia as may be offered in the Humanities, Fine Arts, and Social Sciences on this campus.

Courses in Asian Culture

1A-B-C Modern Chinese (1-1-1) F, W, S

2A-B-C Modern Chinese (1-1-1) F, W, S

3A-B-C Modern Japanese (1-1-1) F, W, S

100A Ancient Chinese Culture (1) F
Chinese Civilization from the beginnings to ca. 900 A.D.

100B Modern Chinese Culture (1) W
Chinese Civilization from 900 to the present.

100C Japanese Culture (1) S
Japanese Civilization from mythological times to the present.

***101A-B-C Literary Chinese** (1-1-1)

***102 Japanese Literature in Translation** (1)
Readings in selected poetry, drama, and fiction from Nara times to the present.

***103 Contemporary China** (1)
Developments in Chinese cultural life since 1911; thought, literature, politics, the arts.

104 Chinese Literature in Translation (1)
The ancient "classics," poetry, the belletristic essay, criticism, the tale and the novel, from the earliest times to the present.

***105 Chinese Thought** (1)
The rise and development of Confucianism, Taoism, and Legalism; the impact of Indian Buddhism; Neo-Confucianism, reactions to Western ideologies, and modern Maoism.

***106 Buddhism in Asia** (1)
The life and thought of the Buddha; the spread of Buddhism into China and Japan and its development in those countries.

***107 The Discovery of India** (1) F
The forces that shaped India; interdisciplinary survey of Indian history, philosophy, religion, and art.

108 Indian Classics (1) W
The Indian mind; classics of philosophy, aesthetics, and literature.

109 The Indian Image Abroad (1) S
Cultural encounter and dialogue between India and other countries; the evaluation and assimilation of India in the twentieth century.

***110 Readings in Modern Chinese** (1)
May be repeated for credit.

111 Readings in Literary Chinese (1)
May be repeated for credit.

115 Modern Japanese Intellectuals and Writers (1) W
Reading and analysis of modern Japanese critical and creative writers; seminar format, with each student pursuing an individual topic.

116 Ancient China (1) W
The beginning of Chinese civilization, from prehistoric times through the Hsia, Shang, and Chou periods; the origins of Chinese social and political institutions, and the rise of the great schools of thought, down to 221 B.C.

***117 Philological Method** (1)
Analysis of the Chinese script; investigations into the meanings and phrases in premodern Chinese texts. Prerequisite: reading ability in literary Chinese.

118 Women in Asia (1) W
The historical and present position of women in Asian cultures. Seminar format with each student pursuing an individual area of interest.

198 Readings in Modern Japanese (1-1-1) F, W, S
A reading course for students with the equivalent of one year of modern Japanese. Emphasis on learning the grammar and Kanji necessary for an intermediate reading knowledge of Japanese.

199 Individual Study (1-1-1) F, W, S
May be repeated for credit.

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*Not offered 1971-72.

Black and Comparative Culture

The Program in Black Culture is designed to investigate the Black experience in America. It concentrates, particularly, on questions of Black identity, urban problems, civil rights legislation, and Black literature, psychology, and history. Necessarily, such work will require field work and community activities as part of the educational program.

Lower Division

In addition to the general core designed for all Comparative Culture majors, the student concentrating in Black Culture should elect to take courses which would strengthen his background in literature, philosophy, social sciences, and fine arts. Since the natural and biological sciences have had a decisive impact on the modern world and its cultures the student should, upon consultation with his advisor, elect appropriate courses in these areas. Finally, as an introduction to the Black Culture area, he should complete Introduction to Black Culture.

Upper Division

The student should plan his program to include at least one course offering field study in the Black community, one course in Black Literature, and one course in either Black Politics, Black Psychology, or Community Problems. In addition the student will be required to take Statistics for Culture Study and either Economics and Poverty or Urban Problems.

Courses in Black Culture

100A-B-C Contemporary Problems (1-1-1) F, W, S
This course will deal with problems related to race and poverty and will involve field work and participant-observation in programs like Operation Bootstrap and Core in Los Angeles and Orange Counties.

***101A-B Economics of Discrimination** (1-1)
Studies of occupational ceilings, job penetration, and other factors involving economic discrimination.

103A-B Urban Problems (1-1) W, S
Analysis of problems of minorities in the city. This course will require field observation and analysis.

104 Selected Black Literature (1) F
A study of selected works of Afro-American fiction, poetry, and drama, works representative of the evolution of the Afro-American spirit. Works by the following authors will be studied: Chestnutt, DuBois, McKay, Cullen, Hughes, Wright, Himes, Ellison, Baldwin, Marshall, Elder, and Bullins.

105 The Image of the Black Man in American Films (1) W
A history of the portrayal of the black man in American films from "Birth of A Nation" to the present.

106 Workshop in Urban Film-Making (1) S
Continuation of Black Culture 105. This course will provide instruction in the technique of film-making and require each student to make a film dealing with minority or urban problems.

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*Not offered 1971-72.

***107A Black America I** (1)
Same as Social Science 165U. An examination of the role of civic, political, economic, religious, and other institutions and organizations in the Black Community. Discussion will include a review of the impact of contemporary events in the Black Community.

***107B Black America II** (1)
Same as Social Science 165W. Analysis of the styles and major themes of Black spokesmen including Douglas, Dubois, Washington, Garvey, King, Malcolm X, and Carmichael. Discussion will include a review of the impact of contemporary events in the Black Community.

110 Race and Economics (1) W
Economic analysis applied to political ideologies with the particular emphasis on nationalistic interpretation — Black Power; White Power, Black Capitalist; Civil Rights; Employment and Income; Government Programs, Trade Unions.

112 Black Psychology: A Psychological View of the Black Experience (1) F
An examination of the personality patterns, psychological dynamics, and socio-cultural styles which have emerged from the encounter of Black people with the American Culture.

113 Black Psychology: The Black Child and the Urban School System (1) F
Exploration of the interaction between the Black child and the school in terms of critical issues such as intelligence, achievement, motivation, conformity, alienation, and social change.

114 Black Psychology: Black Power (1) W
An examination of the psychological implications of the Black Power concept especially as it relates to a rapidly emerging awareness of the need for self-defined identity anchored in the Black experience.

115 Black Psychology: Mental Health and the Black Community (1) W
Examination of the dynamics related to both psychological actualization and psychopathology. Course will also include an exploration of group processes, counseling, and psychotherapeutic models.

123 Economics of the Black Community (1) W
In-depth analysis of the economic factors which help to explain the fundamental origins of the black ghetto, (or any ghetto) and the mechanisms through which the exploitation and deprivation are perpetuated, and the exploration of some strategies for ending them. Some field trips and participant-observation in the poverty areas will be made.

124A-B Black Linguistics (1-1) W, S
A study of verbal and non-verbal communication as historically evolved from the Black experience and existing as an integral part of contemporary Black America's life style.

125 Economic Development of Ghetto (1) F
Analysis of the socio-economic, political, economic forces which cause the creation of the ghetto as an underdeveloped colony. Theories and policies necessary for economic development in Third World Countries.

199 Individual Study (1-1-1) F, W, S

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*Not offered 1971-72.

Chicano and Comparative Culture

The program in Chicano Culture explores the experience of the Mexican-American in American society, particularly in California and the Southwestern United States. Studies of agricultural and urban problems, the character and crises of Chicano identity, the relation of the Chicano to Civil Rights legislation, and educational problems of the Chicano provide the focus of this program. Course work will involve participant-observation in Orange County.

Lower Division

In addition to the general core designed for all Comparative Culture majors, the student concentrating in Chicano Culture should elect to take courses which would strengthen his background in literature, philosophy, social sciences, and fine arts. Since the natural and biological sciences have had a decisive impact on the modern world and its cultures the student should, upon consultation with his advisor, elect appropriate courses in these areas. Finally, as introductions to Chicano Culture he should complete the introductory courses offered to lower-division students. In addition, the student should be familiar with Spanish and the problems of Mexican-American bilingualism.

Upper Division

Juniors and seniors concentrating on Chicano Culture will coordinate their upper-division course work with their faculty advisor.

Courses in Chicano Culture

111 Approaches and Strategies for Teaching the Bilingual and Bicultural Child (1) F
This course is designed to further the understanding of the needs of Chicano pupils through an examination of the inherent cultural values as a basis for development of appropriate approaches and strategies to the teaching of bilingual and bicultural children. Topics include: implications of the history of Mexican-Americans in the United States; value systems, expressed in family and religious influence of art forms, food, and music; parental and pupil attitudes toward school. Attention will also be given to trends in counseling and guidance practices and ways of building self-esteem with Mexican-American children.

112 Farm Labor and Business in California (1) S
Same as Social Science, 193U, Sec. A.
An inquiry into the problems faced by labor and business in California agriculture. Programmed with a brief historical summary, but concentrating on the contemporary scene. Instructional media, outside speakers, and field trips will be employed.

***114 Comparative Ethnic Politics** (1)
An analysis of contemporary ethnic politics in the United States with particular emphasis on the politics of nonwhite ethnics, e.g., Chicano, Black, Asian-American, and American Indian, and the implications of their politics to the American political system.

***115 Chicano Political Behavior: Scopes and Methods** (1) F
A critical analysis of social science methodology as it has been applied to the study

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*Not offered 1971-72.

of Chicano political behavior. Course will develop general hypotheses related to the Chicano political experience in the United States which can be tested either by micro and macro empirical models of political analysis or critically analyzed within normative conceptual frameworks.

116 Chicano Politics (1) F
Political life of the Chicano in the United States. Ideology and prospects of Chicano socio-political movements with regard to their impact on barrio politics and Anglo urban political institutions.

***118 Chicano Intellectual Thought: Seminar** (1) S
A critical examination of Chicano literature. The focus of the course will be on social and political thought and will attempt to trace its origin to the philosophical and ideological writings of Mexican and other third world intellectuals. Upper division only.

198 Sem. A. The Image of the Chicano in American Literature (1) S
This is a reading course; the student will read at least six books selected from a reading list plus a selection of contemporary Chicano literature.

198 Sem. B Contemporary Chicano Literature (1) S
This is a reading course; the student will read as much as possible (minimally, the equivalent of nine full-length books) from a list of contemporary Chicano writing arranged (1) to move from folk narrative to "serious" literature; (2) geographically (e.g., the work of Chicanos in Mexico, Texas, New Mexico, Arizona, and California).

199 Individual Study (1-1-1) F, W, S

Latin American and Comparative Culture

The program in Latin American Culture is designed at this time for cross-cultural comparison with Chicano Culture, with American Culture, with Black Culture, and so on. The student planning to use Latin American Culture courses as part of his comparative studies should have at least an elementary acquaintance with Spanish or Portuguese, preferably both.

Courses in Latin American Culture

***101 Latin American Economic Problems** (1)
A study of the processes and problems of promoting economic development in Latin America. Includes discussion of national economic planning, population, international assistance. Each student will write a research paper on a particular problem of development of a Latin American country.

***102 Latin American Politics** (1)
Analysis of social and political change in Latin America. Prerequisite: Social Science 4U or Latin American History.

150 The Mexican (1) F
Same as History 150.

151 The United States and Latin America (1) W
Same as History 151.

152 Revolutionary Latin America (1) S
Same as History 152.

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*Not offered 1971-72.

The following courses are given in the Department of Spanish and Portuguese and may be counted toward a comparative group:

110A Civilization (1) F
131A Latin American Essay (1) F
198A Spanish for Chicanos (1) F
233A Latin American Novel (1) F
260A Trends in Criticism (1) F
110B Civilization (1) W
131B Latin American Essay (1) W
198B Spanish for Chicanos (1) W
233B Latin American Novel (1) W
260B Fernand Arrabal (1) W
110C Central America (1) S
131C Latin American Essay (1) S
233C Latin American Novel (1) S
260C Trends in Criticism (1) S

Russian and Comparative Culture

Courses in Russian Culture are available as a cross-cultural comparative area of study for students majoring in Comparative Culture. The language requirement for students electing this option may be met in Russian. For 1971-72, the following courses will tentatively be offered:

Courses in Russian Culture

20A-B Russian Civilization (1-1) W, S
Same as Russian 20A-B.

136A-B-C The History of Russia (1-1-1) F, W, S
Same as History 136A-B-C.

150A-B-C Russian Literature in Translation (1-1-1) F, W, S
Same as Russian 150A-B-C. In 1971-72 topic for 150C will be: Russian Intellectual Thought.

170 Russian Literary Criticism
Same as Russian 170.

180 Tolstoy in Translation
Same as Russian 180.

181 Major Russian Writer in Translation (1) S
Same as Russian 181.

DEPARTMENT OF INFORMATION AND COMPUTER SCIENCE

The development of the modern digital computer has made possible the solution of large-scale information processing problems in science, industry, and government. These problems include predicting the orbit of a satellite, simulating the economy, keeping track of inventories, and checking income tax returns. Such problems are solved by having the computer execute a procedure—a sequence of information processing operations including but not limited to the conventional arithmetic operations of addition, subtraction, multiplication, and division. Information and computer science is concerned with the development of procedures which are effective and efficient, languages suitable for stating these procedures, and systems for executing procedures.

The implications of research in the development of information processing procedures and of systems for preparing and executing these procedures extend beyond the direct applications in using the modern digital computer to solve problems ranging from bookkeeping to the control of orbiting satellites. Many animate and inanimate systems can be usefully viewed as information processing systems and analyzed in terms of the way they represent, store, and process information. Thus information and computer science provides a point of view, an approach, for studying phenomena in many sciences.

Degrees Offered

Information and Computer Science . . . . . B.S., Ph.D.

Undergraduate Program

The undergraduate program in information and Computer Science is designed both for students preparing for professional careers and for students preparing for graduate study in information and computer science. The program is designed to acquaint the student with the presently available methods of information and computer science which are useful in solving problems of science, industry, and government; to prepare the student for the additional formal and self education he will require in this rapidly developing field; and to foster and extend the student's abilities to solve the kinds of problems encountered in information and computer science. The use of the computer as a problem-solving tool and the effects of its adoption on procedure and data representation are the underlying themes of the program. As in all UCI undergraduate programs the undergraduate student in information and computer science will normally spend about half of his time in general education and the other half of his time in courses required by the Department.

Undergraduate degree programs in information and computer science are a relatively new development in a relatively new field. The development of such programs is based on the premise that a special program in the field can provide a better preparation for students who will be concerned with the problems of information and computer science and that the field is now sufficiently developed to fruitfully support such a program.

Students interested in digital computer programming will normally begin their studies with Introduction to Digital Computation (ICS 1) and continue in the programming sequence with Computers and Programming (ICS 2) and Information Structures (ICS 3) as far as their interests require and their programs permit. Students who are doing, or planning to do, extensive work with numerical problems are advised to consider courses in numerical analysis. Short courses in particular computer languages will also be available, and the student who has mastered the topics in the programming sequence should be able to learn any of these languages in such short courses.

Joint Program with the Graduate School of Administration

The Department of Information and Computer Science and the Graduate School of Administration offer a special five-year program for selected students leading to both a Bachelor of Science degree in Information and Computer Science and a Master of Science degree in Administration.

Requirements for the Bachelor's Degree

University Requirements: See page 23.

Departmental Requirements

Mathematics: Calculus and linear algebra (Mathematics 2A-B-C, 3A-B-C); probability and stochastic processes (Mathematics 130A-B-C) or mathematical statistics (Mathematics 131A-B-C) or algebra (Mathematics 120A-B-C) or statistical methods (Mathematics 170A-B-C). *Introduction to Programming:* Introduction to digital computation (ICS 1); computers and programming (ICS 2); information structures (ICS 3). *Advanced courses:* Programming languages and systems (ICS 110A-B); computer organization (ICS 120A-B); formal models in information and computer science (ICS 130A-B). *Senior Seminar:* ICS 190A-B-C.

Graduate Programs

The doctoral program is designed to prepare teachers and researchers in information and computer science. The program consists of four major parts: thorough preparation in computer programming and programming languages; introduction to additional topics in and relevant to information and computer science; intensive study in an area of specialization offered by the Department or an area offered in conjunction with the doctoral program of another department; and dissertation research and documentation.

Admission to the Program

About ten students will be admitted each year. Applications will be evaluated on the basis of the student's prior academic record and his potential for

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*These requirements are under study and may be changed in the future. Students should consult the Departmental Information Bulletin issued in fall 1971 for a complete listing of courses and subject content.

creative research and teaching in information and computer science. Applicants are expected to have: (1) skills in computer programming at least equivalent to those obtained by good students in a one-year college-level course in programming and (2) skills in mathematics equivalent to those obtained by good students who complete college-level courses in logic and set theory, analysis, linear algebra, and modern algebra or probability and statistics.

Requirements for the Ph.D.

(1) Preliminary Studies: Demonstration of understanding and competence in advanced algorithmic analysis; programming languages, translators, and programming systems; and other selected topics in information and computer science. This requirement can be completely or partially satisfied by examination or by successful completion of the courses offered in these fields (Information and Computer Science 3, 110A-B, 120A-B, 130A-B, 200A-B-C, 210A-B-C, and/or 220A-B-C).

(2) Specialization: Demonstration of exceptional competence in an area of specialization. Initially the following fields will be available: programming languages, translators, and programming systems; heuristic programming; theory of computation, finite automata, and formal languages; pattern recognition.

(3) Examinations: Typically toward the end of his fourth quarter in residence, a preliminary appraisal of the student's progress will be made. This appraisal will be based on the student's performance in the first year of his program. Typically toward the end of the seventh quarter in residence, the student will be examined on his understanding of the field and his area of specialization.

(4) Foreign language: Ability to read scientific papers (with the aid of a dictionary) in Russian, Chinese, Japanese, German, or French.

(5) Dissertation: Completion and documentation of a research project which represents a substantial contribution to information and computer science; an oral examination on the dissertation.

Information and Computer Science Faculty

Frederic M. Tonge, Ph.D. Carnegie Institute of Technology, *Professor of Administration and Information and Computer Science and Chairman of the Department of Information and Computer Science*

William Ash, B.S. University of Michigan, *Acting Assistant Professor of Information and Computer Science*

Robert J. Bobrow, B.S. Massachusetts Institute of Technology, *Acting Assistant Professor of Information and Computer Science*

John P. Boyd, Ph.D. University of Michigan, *Assistant Professor of Anthropology and Information and Computer Science*

John S. Brown, M.S. University of Michigan, *Acting Assistant Professor of Social Science and Information and Computer Science*

David J. Farber, M.S. Stevens Institute of Technology, *Acting Associate Professor of Information and Computer Science*

Julian Feldman, Ph.D. Carnegie Institute of Technology, *Assistant Chancellor for Computing and Professor of Psychology and Information and Computer Science*
Marsha D. Hopwood, *Lecturer in Information and Computer Science*
William Howden, M.S. Rutgers University, *Lecturer in Information and Computer Science*
William M. Newman, Ph.D. Imperial College, *Assistant Professor of Information and Computer Science*
Jack Sklansky, Sc.D. Columbia University, *Professor of Electrical Engineering and Information and Computer Science*

Associated Faculty

Alfred M. Bork, Ph.D. Brown University, *Professor of Physics and Information and Computer Science*
George W. Brown, Ph.D. Princeton University, *Professor of Administration and Information and Computer Science and Dean of the Graduate School of Administration*
Keith E. Justice, Ph.D. University of Arizona, *Associate Professor of Population and Environmental Biology*
Kenneth Wexler, Ph.D. Stanford University, *Assistant Professor of Psychology*

Lower-Division Courses in Information and Computer Science

1 Introduction to Digital Computation (1)
Concepts and properties of procedures, language and notation for describing procedures, for their solution, application of a specific procedure-oriented language to solve simple numerical and non-numerical problems using a computer.

2 Computers and Programming (1)
Logical basis of computer structure, machine representation of numbers and characters, flow of control, instruction codes, arithmetic and logical operations, indexing and indirect addressing, input-output, subroutines, linkage, macros, interpretive and assembly systems, pushdown stacks, and recent advances in computer organization. Several computer projects to illustrate basic concepts will be incorporated. Prerequisite: ICS 1.

3 Information Structures (1)
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures, and storage allocation and collection. Multilinked structures. Symbol tables and searching techniques. Sorting (ordering) techniques. Formal specification of structures, data structures in programming languages, and generalized data management systems. Prerequisite: ICS 2.

10 Computer Appreciation
An introduction to the current state of information and computer science and technology for the non-technical student. Provides an overview for the person who wants to understand computers and automation as a major element in our technological society. Terminology and concepts; information structures; hardware and software; programming languages; applications in business, science, and education; implications.

15 Semantics of Computing (1)
Introduction to computers intended primarily for students in the social sciences, fine arts, and humanities. In this course we shall stress the non-numeric uses of computers including their use as powerful symbol manipulators. Emphasis will be on discov-

ery of computing concepts through actual use of computers. Credit may not be received for both this course and ICS 1.

Upper-Division Courses in Information and Computer Science

110A-B Programming Languages and Systems (1-1)
Formal description of algorithmic languages, e.g. ALGOL, and the techniques used in their compilation. Study of syntax, semantics, ambiguities, procedures, replication, iteration, and recursion in these languages. Syntactic decomposition and the theory of compilers which are syntax directed or recursively controlled. Input-output and storage systems, structures and transformations of data bases, assembly and executive systems. Prerequisite: ICS 3.

120A-B Computer Organization (1-1)
The design of information processing systems. Among the topics discussed will be microprogramming and hardware-software tradeoffs. Consideration of novel computer organizations and the relation of organization to problem-solving capabilities. Prerequisite: ICS 2. Recommended: ICS 110A-B.

130A-B Formal Models in Information and Computer Science (1-1)
A discussion of various types of automata, such as finite, probabilistic, growing, and reproducing automata. Representation of automata by regular expressions, state graphs, logical nets, recursive functions, and Turing machines. Prerequisite: ICS 2.

180 Special Topics (1)

190A-B-C Senior Seminar (1-1-1)
Students will participate in individual and joint projects on special topics in the field. An opportunity to explore selected topics in greater depth. Some possible topics: *Advanced Computer Organization, Formal Languages and Syntactic Analysis, Computational Linguistics,* and Heuristic Programming. Prerequisite: senior standing in ICS or consent of instructor.

199 Individual Studies (1)

Graduate Courses in Information and Computer Science

Graduate-level seminars and workshops are not all offered each year but are offered as student and faculty interests dictate.

200A-B-C Proseminar in Information and Computer Science (1-1-1)
Proseminar in Information and Computer Science is a combination of formal courses, seminars, tutorials, and reading courses to acquaint graduate students with selected topics in computer organization, logical design, linguistics, automata theory, numerical methods, and human information processing.

210A-B-C Advanced Algorithmic Analysis (1-1-1)
Advanced techniques for programming digital computers including the analysis of numerical and non-numerical algorithms, information representation and organization, heuristic programming, and optimization techniques.

220A-B-C Programming Languages, Translators, and Systems (1-1-1)
Formal description of algorithmic languages and the techniques used in their translation. Study of syntax, semantics, ambiguities, procedures, replication, iteration, and recursion in these languages. Syntactic decomposition and the theory of translators which are syntax directed or recursively controlled. Input-ouput and historic systems, structures and transformations of data bases, assembly and executive systems.

250 Seminar in Programming Languages, Translators, and Systems (1)

251 Seminar in Artificial Intelligence (1)

252 Seminar in Automata Theory (1)

253 Seminar in Formal Languages (1)

254A-B-C Seminar in Pattern Recognition (1-1-1)
Same as Engineering 220A-B-C.

255A-B Seminar in Self-Organizing Systems (1-1)
Same as Engineering 221.

256 Seminar in Computer Architecture (1)

257 Seminar in the Economics of Computation (1)

258 Seminar in the Social and Economic Implication of Computers and Automation (1)

259 Seminar in Optimization Techniques (1)

260 Seminar in Computational Linguistics (1)

261 Seminar in Numerical Analysis (1)

262 Seminar in Models of the Brain (1)

270 Workshop in Programming Languages, Translators, and Systems (1)

271 Workshop in Artificial Intelligence (1)

272 Workshop in Automata Theory (1)

273 Workshop in Formal Languages (1)

274 Workshop in Pattern Recognition (1)

275 Workshop in Self-Organizing Systems (1)

276 Workshop in Computer Architecture (1)

280 Special Topics in Information and Computer Science (1)

298 Thesis Supervision (1)

299 Individual Study (1)

PROGRAM IN SOCIAL ECOLOGY

One of the major trends of our times is the increasing complexity and urgency of the problems of the community—whether the community be urban, suburban, or rural. The problems range from such policy issues as those involving optimum allocation of health resources to such practical decisions as the choice of a site for water resource development on the basis of various human values.

Dealing with these problems in future years will require an enormous array of talent. In demand will be people familiar with the community and issues, on the one hand, and with scientific content and method, on the other. Training and education have all too often led to knowledge and ability in one of these two domains at the expense of relative ignorance of the other. The typical community social worker frequently has a superb feel for community interactions and difficulties but is not up on the latest thinking in the academic world, while the experimental behavioral scientist may know method and theory but have no contact with the problems of the real world.

The Program was conceived and developed for the purpose of providing direct interaction between the intellectual life of the university and the recurring

problems of the community. And since it was founded on the conception of man as a biological organism in a cultural-physical environment, the orientation is *necessarily multidisciplinary.*

In operation, the curricula in Social Ecology are aimed at three classes of students. First, it provides the context for educating people needed for various programs and agencies of the community. It has been an initiator, for example, of paraprofessional training in the mental health area at the university level—where the B.A. degree will fully qualify Social Ecology graduates for a new classification of mental health worker.

Second, the Program provides the setting for preparing students for professional specialization in schools of administration and law, as well as for graduate work in such academic units as social sciences and biological sciences. To illustrate, our curriculum in criminal justice is proving to be excellent pre-law training. In this curriculum, students spend one-fourth of their junior and senior years in such field activities as the courts, law enforcement agencies, probation units, and the criminal justice council. The Program expects to produce graduates with unique abilities and capacities for graduate education. Even established disciplines are calling more and more for people with cross-disciplinary backgrounds.

And finally, the courses of study of the Program are highly appropriate for educating students to become more effective and knowledgeable citizens because of a familiarity with community problems and the potential modes of solution, regardless of students' ultimate career objectives. For example, working in a child guidance clinic and a crisis clinic can be of immense value to a person who later chooses teaching as a career goal; similarly, assignment to air or water pollution control agencies can be of great help to someone who chooses industrial management as a career.

The curricula of the Program are organized by problem area, not by discipline. They are oriented towards producing a coordination between on- and off-campus experience, theoretical and applied learning, so that each enhances and enlarges the other. The Program is innovative in that it will enable students to work effectively on community problems in a variety of contexts while simultaneously meeting the central goals of an undergraduate education. Students are free to choose their fields of assignment and their associated study programs; required field study involves one course per quarter during the junior and senior years.

Students are expected to spend about one-third of their on-campus time in formal course work in the several academic departments, about one-third in courses, workshops, and both general and special seminars related to their community field assignments, and about one-third in formal course work and independent study within the Program. The Social Ecology Program offers courses, seminars, workshops and independent study in accord with the interests of students and faculty and the needs of the community activities. Students participate in the selection of subjects to be discussed in each seminar and workshop as well as in independent study.

Degrees Offered

Social Ecology . . . . . B.A.

Honors at graduation will be awarded to about 12% of the graduating seniors. Initial eligibility for such honors will be on the basis of grade point average. Among those qualifying, the awards of *summa cum laude, magna cum laude,* and *cum laude* shall be determined by a committee that considers, in addition to grade point average, scholarship as displayed in day-to-day work, contributions to the community of social ecologists, performance in field assignments, and a paper defining a community problem and demonstrating insight into its causes, its bases of continuance, and the potential paths toward solution.

Limitations on Enrollments

The Program in Social Ecology is predicated on a close faculty-student-community interaction and upon close supervision of field work; enrollment capacities will be made as large as is compatible with these essential goals. Despite significant increases in faculty, the burgeoning student demand for this major *may* not allow for the acceptance of all qualified students. Those who cannot be immediately accepted into the Program as majors may request that their names be placed on a waiting list in the Program office to insure their earliest admission.

Requirements for the Bachelor's Degree

University requirements: See page 23.

Departmental Requirements

Social Ecology 1A-B-C; field study (Social Ecology 197) during each quarter of the junior and senior years (one course credit for each quarter); the appropriate prerequisites for any field study undertaken (Social Ecology 2 through 8).

Undergraduate Program

During their first year in Social Ecology all students participate in a general seminar (Survey of Social Ecology—Social Ecology 1A-B-C). Problems appropriate to Social Ecology are explored by discussions of the core areas within the Program: Community Mental Health, Behavior Change, Environmental Pollution and Health, Social Change, Urban Systems and Regional Planning, Criminal Justice, and Educational Policy and Institutions. The Seminar will, as desirable, explore specific projects such as the planning of community mental health programs, the establishment of urban development programs, and surveys of court actions. In addition to faculty participation, resource people from the community present relevant material and lead discussions.

After the first year, students participate in courses, workshops, special seminars, and independent study in accord with their selected problem area or areas. The goal is to become competent in the problem areas by concentrated study across all relevant disciplines. In the sophomore year, students will usually take three of the courses that are prerequisites to field study in any of the core areas (Social Ecology 2 through 8), and many will elect to take courses in methodology that will aid their field work (e.g., Social Ecology 11 and 13). Breadth requirements will normally have been completed by the end of the sophomore year.

During his junior and senior years, the student majoring in Social Ecology is required to devote one course per quarter to his field assignment. Field work in Social Ecology must be sharply differentiated from the work of a social worker or a community worker or any comparable applied job. The field program is aimed at enhancing the *learning* experience of students by making field and academic aspects directly relevant to each other. Field study assignments are under the direct supervision of field personnel, but each field project has a faculty advisor who visits students and evaluates their work, coordinates various efforts, and is responsible for the intellectual-academic policies involved in the work. Moreover, some aspect of the advisor's own research is presumably in the area under his direction and further supports the work in the field and coordination with campus activities.

Students in all field assignments work as a part of a project team. Their particular assignments are a function of their backgrounds and accumulating experience. When appropriate, they become participating members of the community of their assignment. In some cases this may mean living with families of the community.

The following are examples of field assignments currently available: Crisis Clinic of Orange County Medical Center; Goodwill Industries; Metropolitan State Hospital; Orange County Criminal Justice Council; Orange County Medical Center; Fairview State Hospital; San Joaquin School District; Santa Anita Community Center; Protective Services for Children; California Department of Rehabilitation; Child Guidance Clinic of Orange County; Big Brothers of Orange County; Family Services Association of Orange County; Community Services—Department of Welfare.

Planning a Program of Study

The following *sample* program illustrates the operation of Social Ecology from the perspective of a student who elects to concentrate in the area of Social Change. Since the Program has only two required course sequences (Social Ecology 1A-B-C and six Social Ecology 197's), *it is extremely important that each major stay in close contact with his academic advisor.* This contact will facilitate a coherent academic plan for the student and provide important feedback that will aid the achievement of a primary goal of the Program: course offerings and field studies that reflect student needs and interests.

	FALL	WINTER	SPRING
Freshman	SocEcol 1A Math 5A Univ. Studies I SocSci 10R, G, or X	SocEcol 1B Math 5B Univ. Studies II SocSci 10R, G, or X	SocEcol 1C Math 5C Univ. Studies III SocSci R, G, or X
Sophomore	SocEcol 33 BioSci 1A SocEcol 4, 5 or 7 Spanish 2A	SocEcol 11 Bio Sci 1B SocEcol 4, 5 or 7 Spanish 2B	SocEcol 13 BioSci 1C SocEcol 4, 5 or 7 Spanish 2C

	FALL	WINTER	SPRING
Junior	SocEcol 197 Chicano Clt 100A SocEcol 148 History 29A	SocEcol 197 Black Clt 107 SocEcol 143 History 29B	SocEcol 197 SocEcol 107 SocEcol 198 History 29C
Senior	SocEcol 197 SocSci G, H, or J History 170A SocEcol Elective	SocEcol 197 SocSci G, H or J History 170B SocEcol Elective	SocEcol 197 SocSci G, H or J SocEcol Elective SocEcol Elective

Social Ecology Faculty

Arnold Binder, Ph.D. Stanford University, *Director of the Program in Social Ecology and Professor of Psychology*

Albert J. Ahumada, Jr., Ph.D. University of California, Los Angeles, *Assistant Professor of Psychology*

Paul D. Arthur, Ph.D. California Institute of Technology, *Professor of Aerospace Engineering and Associate Dean, School of Engineering*

Robert E. Bickner, B.A. University of Florida, *Research Economist, Public Policy Research Organization and Lecturer in Social Ecology*

Arthur S. Boughey, Ph.D. Edinburgh University, *Professor of Population and Environmental Biology and Social Ecology*

Richard Degerman, Ph.D. Johns Hopkins University, *Assistant Professor of Psychology*

Bernard A. Desenberg, Ph.D. Ohio State University, *Director, Instructional Media Services and Lecturer in Social Ecology*

Henry Fagin, M.S. Columbia University, *Professor of Administration and Research Administrator in the Public Policy Research Organization*

John Flowers, Ph.D. University of Southern California, *Assistant Professor of Social Ecology in Residence*

Robert M. Gordon, M.A. Yale University, *Lecturer in Information and Computer Science and Social Ecology*

Louis A. Gottschalk, M.D. Washington University Medical School, *Professor and Chairman of the Department of Psychiatry and Human Behavior*

Alexander Mood, Ph.D. Princeton University, *Professor of Administration, Director of the Public Policy Research Organization*

Michael W. O'Neill, M.S. Michigan State University, *Acting Assistant Professor of Social Ecology*

Mansell Pattison, M.D. University of Oregon Medical School, *Associate Professor in Residence, Psychiatry and Human Behavior and Lecturer in Social Ecology*

Pamela A. Reagor, Ph.D. University of Illinois, *Assistant Professor of Social Ecology in Residence*

Roger W. Russell, Ph.D. University of Virginia, *Vice Chancellor — Academic Affairs and Professor of Psychobiology and Psychology*

Carol Whalen, Ph.D. University of California, Los Angeles, *Assistant Professor of Social Ecology*

Undergraduate Courses in Social Ecology

Listed below are some of the courses to be offered during 1971-72. During registration week a complete listing of the Social Ecology courses to be offered in the subsequent quarter will be available in the Program office, Suite 716, Engineering Building.

1A-B-C Survey of Social Ecology (1-1-1) F, W, S
An introduction to community problems by discussions of Social Ecology field study areas: community mental health, behavior change, environmental pollution and health, social change, urban systems and regional planning, criminal justice, and educational policy and institutions. In addition to faculty participation, conducted in proseminar fashion, resource professionals from the community will present relevant material and lead discussions.

2 Introduction to Behavior Change (1) F
The general purpose of this course is to prepare the Social Ecology major for field studies in which he will work toward behavior change for individual pupils, clients, patients, etc. Emphasis will be on assessment of the attitudes, motivations, expectations, and behaviors of the person in his environment and applications of learning theory for change. Prerequisite for Social Ecology 197E.

3 Introduction to Environmental Pollution and Health (1)
Prerequisite for Social Ecology 197F.

4 Introduction to Social Change (1)
Prerequisite for Social Ecology 197G.

5 Introduction to Urban Systems and Regional Planning (1)
Prerequisite for Social Ecology 197H.

6 Introduction to Community Mental Health (1) W
This course will explore various techniques of social action aimed at maximizing the treatment potentials for individuals and groups. Basic concepts and strategies of community mental health will be introduced, including community organization, social systems dysfunction, consultation and training techniques, and service delivery systems. Prerequisite for Social Ecology 197D.

7 An Overview of the Criminal and Juvenile Justice Systems (1) F
This course will trace our legal systems from its common law heritage. An introduction to criminal and constitutional law in the United States will provide the basis for discussion of our constitutional structure, corrections, probation and parole, and the police activities of arrest, search and seizure, and interrogations. Juvenile Court law and procedure will be discussed separately. Prerequisite for Social Ecology 197I.

8 Introduction to Educational Policy and Institutions (1)
Prerequisite for Social Ecology 197J.

11 Methods of Interviewing (1) W
The purpose of this course is to prepare the Social Ecology major for the development of interviewing skills needed in field study. Various methods will be discussed as they are tailored to different situations involving exchange of information: e.g., intake, job assessment, child counseling, research.

13 Methods of Small Group Interaction (1)
Theories and techniques of small group dynamics and structure will be reviewed and evaluated. Comparisons will be made among group methods of leadership development, conflict resolution, sensitivity training, social action, growth and encounter. A laboratory in group experience will be included.

33 Ecological Concepts (1)
An introduction to the basic concepts in ecology: populations, communities and ecosystems; the nature of diversity, stability, productivity, cycling and succession; resource utilization and modeling; regulatory mechanisms in eco-systems and the ecological and social consequence of their disturbances.

103A-B-C Social Implications of Computing (1-1-1) F, W, S
Just as the invention of the steam engine has wrought awesome changes in man's environment, so the invention and use of the digital computer promise changes of profound consequence, including the nature of learning, the nature of work and compensation for it, alterations in the form of government, personal freedom and privacy. We shall come to know what attributes of the computer give it its awesome potential, we will explore several kinds of social activities to determine how they might change and the desirability of such change. A practical knowledge of computing, equivalent, say, to that obtained from successful completion of ICS 1, would be helpful.

105 Science and Ethics (1) W
Same as Social Science 172R. A discussion of ethical problems which arise from man's social and technological development, with emphasis on specific problems, such as population control, organ transplantation, genetic engineering, biological and chemical warfare, nuclear testing, etc. For each topic the focus will be on establishing the psychological and sociological determinants of our present moral values. How have we acquired our present feelings about what is right and wrong? Is there an objective standard by which ethical codes can be judged, or are standards primarily determined by social factors?

106 Science and Public Policy (1) W
A seminar exploring "policy for science" (government support of scientific research and higher education in the sciences) and "science for policy" (government acquisition and utilization of scientific inputs in the policy-making process). Special topics include: government organization relating to scientific mechanisms for generating science advice for various levels of government; allocation of resources for support of science and for public policy research; the relationship between science and technology; the nature of the scientific community and of scientific progress; the role of the university in contributing scientific inputs to public policy; trends and problems in the relationship of science and public policy.

107 Biology and Public Policy (1)
Same as Biological Sciences 184. Lectures and discussions of the relation between biology and biological scientists and the formulation and execution of public policies. Topics such as population, delivery of health care, and pollution will be discussed as specific examples after a general introduction to the subject.

108 Toward a Unified Science of Man (1)
An interdisciplinary study of the properties of eco-systems, general systems, and dialectical systems as they contribute to a unified science of man. Particular emphasis will be placed on the basic inter-relations between the three theories as they overlap and complement one another. A background in one of the three component areas, the History of Science, or the Philosophy of Science would be of extreme value for this course.

109 Generation to Generation (1) F
A mutual exploration between business and civic leaders, on the one hand, and students, on the other, of the other generation's viewpoints on major social-economic problems. The course emphasizes one-to-one dialogue and provides a good vehicle for communication among students, businessmen, and civic leaders.

112 Role of Mass Media of Communications in Society (1) F, S
An investigation into the mass media of communications, such as TV, radio, newspapers, magazines, and film. Emphasis will be placed on the effectiveness with which the public is informed about social and environmental problems.

113 Survey of the New Therapies (1) F
An overview of such new approaches to counseling, psychotherapy, and facilitation of individual growth as Transactional Analysis, Rational Psychotherapy, Bioenergetics, Gestalt Therapy, Psychotherapy by Computer, and Implosive Therapy. Some

effort will be devoted to the analysis of factors that differentiate between social technologies of lasting import and those of temporary impact.

114A-B-C Social Evolution of the Family (1-1-1)
This course will explore the changing structure and function of the American family. The seminar will progress from a cross-cultural and historical analysis of the development of the family to a discussion of alternative modes of individual and community organization, such as the kibbutz. The course will analyze elements of the American and European utopian traditions to help explore the limits and potentialities of these alternative modes. Special emphasis will be placed on the changing roles of women, children, and work as they affect the family, sexual identity, and community stability.

115 Survey of Clinical Psychology (1)
An overview of the field of clinical psychology including a historical view of the role of the clinician; study of controversial issues in the field (i.e., standards for training, acceptance or rejection of the medical model and diagnosis, the nature of clinical prediction, appropriate use of tests); a survey of diagnostic and therapeutic theory and procedures; evaluation of major clinical practices; discussion of ethics and current trends. Prereqisites: Abnormal Psychology; Behavior Disorders; Personality Theory; or consent of instructor.

116 Drug Use in America (1) F
A survey of drug use and abuse in the United States. The course will examine the use of depressants, stimulants, tranquilizers, food additives, nostrum medicines, the "pill", psychedelics, and other drugs. The examination will be done from many different perspectives, including legal, medical, social, historical, economic, and cultural aspects.

117 Behavior Disorders (1) S
A survey of the characteristics of various types of behavior disorders and the methods used to alleviate or treat or deal with these disorders. Cultural, genetic, and biochemical bases of deviant patterns are discussed and evaluated. Emphasis is placed upon the interaction among the social, legal, and medical components of disordered behavior and society's reactions to its manifestations.

119 Community Mental Health: Organization and Legislation (1)
The current structure and function of community agencies will be explored and related to recent legislation regarding mental illness and mental retardation. Emphasis will be on the implications of recent legislation and current practices for direct mental health services to selected subcultures such as the poor. Manpower needs and future strategies will also be discussed.

120 Methods of Behavioral Modification (1)
A series of presentations of ongoing programs using behavior modification. Behavioral modification techniques are derived from psychological theories of learning and emphasize reinforcement and modeling. The techniques are applied in schools, clinics, homes, and hospitals to modify such behavior as child autism, reading disorders, self-slapping, sexual deviations, alcoholism, attention deficits, adult psychotic disorders, and phobic reactions. They are also used with children who are considered normal but who show minor behavior problems.

121A-B Problems in Adolescent Development (1-1) W, S
An investigation of the biological, psychological, and cultural aspects of human development between the ages of 12 and 18 years. Historical and cross-cultural perspectives will supplement views of contemporary adolescent problems.

122 Death and Dying in America (1)
This seminar will explore, primarily by means of student papers, intra- and interpersonal attitudes toward death and dying, and current practices among health and mental health professionals in the management of terminal illness or injury within American culture.

124 Behavioral Assessment (1)
In this laboratory-seminar, students will explore various methods of observing and

recording the behavior of young children. The focus will be on the development of observational skills and the application of assessment techniques in intervention and research programs.

125A-B-C Methods of Counseling (1-1-1) F, W, S
Exploration of methods and techniques of counseling. Concentrated and in-depth study will be provided by visiting lecturers, discussions, reading, and field experience.

126A-B-C Ombudsmanry (1-1-1)
This class will feature practicing ombudsmen as guest faculty, field placement, as well as selected reading, case discussion, and more formalized "theoretical" presentations. Coverage of the following topics is being planned: a) Introduction and History of Ombudsmanry, b) Kinds of Ombudsmen (with special attention to the United States), c) Practical Problems of the Practicing Ombudsman, d) Techniques and Methods of Ombudsmanry, e) Relation of the Ombudsman to Other Professions, f) The Future of Ombudsmanry.

128A Seminar in Behavior Therapy with Children (1) F
Each student will conduct a behavioral intervention program with a child in a school, hospital or home setting. The focus will be on in-depth specification, application, and evaluation of the principles and procedures of behavior change. The course will consist of one seminar and at least two field sessions a week.

129 Atypical Child Development (1) W
This course will explore theories and research pertaining to mental retardation, cultural and socio-economic differences, behavior disorders and learning difficulties in children. Developmental processes, current controversies, and strategies for research and policy will be emphasized.

131 Air Pollution (1)
Each quarter of this course will cover a different aspect in the field of air pollution. Studies will be concerned with the legal, political, economic, and social aspects of air pollution, studying the air quality legislation on the federal, state and local Orange County levels.

132 Effects of Air Environment (1) S
Extensive studies of interactions between man and his environment have established beyond any possible doubt that behavior is very sensitive to changes induced by external environmental factors in the body's internal chemical milieu. The objective of the course is to examine the short-and long-term nature of such effects and the mechanisms underlying them, to consider methods by which the sophistication of our present knowledge may be increased, and to assess the applicability of our knowledge to public health problems.

135 Dynamics of Human Populations (1) F
The course which consists of two lectures and one lab per week will focus on the main principles and concepts related to populations. Topics to be covered include natality and mortality, emigration and immigration, age distribution, biotic potential, carrying capacity and optimum population levels, fluctuation and regulation, and the physiological and behavioral controls on population size. Computer models of population dynamics will be available in lab for the individual student's use. The scope of the course will be broad, bringing together work done by population biologists and demographers. Sociological considerations with regard to human populations will be stressed.

137 Noise Pollution (1)
An introduction to the scientific measurement of auditory noise, the effects of noise upon people, and methods for controlling noise. Prerequisite: a course in calculus.

143 Planned Social Change (1)
This course introduces students to ways of analyzing and acting on public policy issues. Its scope includes governmental as well as voluntary group action. It represents alternative methodologies of public concepts, methods, and processes essential for effective action. These cut across particular issues and institutions. In preparation

for later independent field work that might be undertaken in the second year of the *Program in Social Ecology, each student enrolled in the course will work under* supervision on a public policy issue project of his choosing. The learning about general methodology will revolve around the problems encountered in doing the *project. The specific issues investigated will depend on student interest and faculty* information resources. The fundamental assumption of the course is that the student will learn about public policy planning and action through project-oriented investigation.

148 Sexual Revolution and Social Change (1) F
This course will examine the origins, significance, nature of the so-called sexual revolution of the 1960's as it impedes, accelerates, or by its very nature requires, social change in basic insitutional structures such as the family, community and state. Examples of the historical role of sexual politics in social change will facilitate this exploration.

173 Constitutional Law and Individual Rights (1)
The course will examine significant United States Supreme Court decisions which have been rendered in the last 10-15 years in the area of constitutional law with reference to general community and individual problems.

174 Police-Community Interaction (1)
A consideration of the role of police in a democratic society, including issues such as policing the ghetto and campus, corruption, centralization, violence, and disruption. Police agencies will be examined as a part of criminal justice, legal, governmental, and political systems.

175 Why Police? (1) F
This course provides the framework for an examination of the role of police in a modern, free society. The student is invited to select a particular area of interest for his own reading, investigation, and subsequent reporting to the class. Topics are to be approved by the professor, and students may work jointly. Use will be made of outside resource personnel, and the student will be expected to contact professionals in his field of interest.

187A-B-C Models of Educational Systems (1-1-1) F, W, S
The composition of the course will be modeled after the higher echelon officers of the Santa Ana School District. Students will conduct interviews with District officials to help the class function better as a mock school system. Within this model students will evaluate motivational effectiveness, intructional effectiveness, and cost-effectiveness.

198 *Directed Group Studies on Special Topics* (1) F, W, S

199 Individual Study (1) F, W, S

Field Assignments

NOTICE: Field Assignments (Social Ecology 197D-J) are open to Junior and Senior Majors ONLY.

197D Community Mental Health (1) F, W, S

197E Behavior Change (1) F, W, S

197F Environmental Pollution and Health (1) F, W, S

197G Social Change (1) F, W, S

197H Urban Systems and Regional Planning (1) F, W, S

197I Criminal Justice (1) F, W, S

197J Educational Policy and Institutions (1) F, W, S

Separate Programs

UNIVERSITY STUDIES

Contemporary university faculties are composed of specialists — it is unlikely that they could do their jobs if they were not. But many academic specialists have a particular interest in how their chosen disciplines relate to other academic fields, to contemporary society, and to the broad intellectual and social issues of the day. With respect to any area of specialized study there are basic questions of theory and ethics: there are implications for the future of society and for the future of the discipline itself. It is important that these implications be made explicit and that opportunity be provided within the University curriculum for their study and contemplation. No one should assume that what he is studying at the moment or what he expects to study as his undergraduate major is unrelated to other disciplines of the academic community. Students should have the opportunity to examine intellectual endeavors other than their own and to learn something of the relevance of these endeavors to their own lives. The courses offered in the University Studies Program have been designed with this goal in mind.

The University Studies Program at Irvine was instituted by a vote of the local Academic Senate in the spring of 1967. It is administered by an organization of Senior Fellows composed of ten members of the University faculty chosen from the various schools making up the Irvine complex. Senior Fellows are appointed by the Chancellor. All courses included in the Program are taught by regular members of the Irvine faculty: they have been introduced into the University curriculum through standard accreditation channels.

University Studies courses are open as electives to all freshmen and sophomores. As a general rule courses are limited to twenty-five, though individual instructors sometimes expand classes beyond this number. Freshmen who have not had a University Studies course are given enrollment priority. Second priority is given to sophomores who have not had a University Studies course. Though three courses in University Studies may may be used to fulfill part of the University breadth requirement, students are advised not to count on this possibility. Due to limited course offerings, in the normal case, students will probably not secure entrance to more than one course in the program.

Senior Fellows

Nelson C. Pike, Ph.D. Harvard University, *Professor of Philosophy (Chief Senior Fellow)*

Hazard Adams, Ph.D. University of Washington, *Professor of English and Dean of Humanities*

Louis Gottschalk, M.D. Washington University, *Professor of Psychiatry*

Alexei A. Maradudin, Ph.D. University of Bristol, *Professor of Physics*
Arthur J. Marder, Ph.D. Harvard University, *Professor of History*
James L. McGaugh, Ph.D. University of California, Berkeley, *Professor of Psychobiology*
Jay Martin, Ph.D. Ohio State, *Professor of English and Comparative Literature*
Roland Schinzinger, Ph.D. University of California, Berkeley, *Assistant Professor of Electrical Engineering*
H. Colin Slim, Ph.D. Harvard University, *Associate Professor of Music*
Grover C. Stephens, Ph.D. Northwestern University, *Professor of Biological Sciences*

Courses in University Studies

Other courses will be added to this list. Such additions will be listed in the quarterly Schedule of Courses. University Studies brochure listing all courses and a full description of each will be available by the first of September.

University Studies I (Fall)

Section 1. Pollution, Physics, and Politics — Mr. Evans
Instructor's field: Physics

Section 2. Science, Science Fiction, and the Future — Mr. Bork
Instructor's field: Physics

Section 3. Science and the Military — Mr. Shaw
Instructor's field: Physics

Section 4. Ideas in Modern Physics — Mr. Kropp
Instructor's field: Physics

Section 5. Chemistry and Nutrition — Mr. Davis
Instructor's field: Chemistry

Section 6. Mathematical Recreations — Mr. Holladay
Instructor's field: Mathematics

Section 7. Approaches To Mind — Mr. Weinberger
Instructor's field: Psychobiology

Section 8. Extrapolations and Scenarios — Mr. Stephens
Instructor's field: Biological Sciences

University Studies II (Winter)

Section 1. Literary Existentialism — Mr. Palley
Instructor's field: Spanish and Portuguese

Section 2. Transportation — Mr. Arthur
Instructor's field: Aerospace Engineering

Section 3. Origins and Archetypes — Mr. Kent
Instructor's field: Comparative Culture

Section 4. British Military Tradition — Mr. Marder
Instructor's field: History

Section 5. Fortunes of Don Juan — Mrs. Hubert
Instructor's field: French

Section 6. An Ancient Poet In Search of An Environment — Mrs. Berkowitz
Instructor's field: Classics

Section 7. Is Pastoralism Possible? — Mr. Brittan
Instructor's field: Philosophy

Section 8. Creativity in Women — Mrs. Palmquist
Instructor's field: Mathematics

Section 9. Science as a Social Process — Mr. Reiter
Instructor's field: Physics

Section 10. Existentialism and the Novel — Mr. Palley
Instructor's field: Spanish and Portuguese

University Studies III (Spring)

Section 1. Chinese Poetry — Mr. Burns
Instructor's field: Physics

Section 2. Concept of Games — Mr. Schimmelpfennig
Instructor's field: German and Russian

Section 3. Literature of the American Indian — Mr. Martin
Instructor's field: Comparative Culture

Section 4. Surrealism; polemics, art and literature — Mrs. Hubert
Instructor's field: French

Section 5. Natural Enemies?? — Mr. Palmquist
Instructor's field: Mathematics

Section 6. Man and Society — Mr. Kluge
Instructor's field: Philosophy

Section 7. Government, Welfare, and the Economy Down Under — Mr. McCullough
Instructor's field: History

Section 8. The Effects of Pure Science on Modern Life — Mr. Wagner
Instructor's field: Molecular Biology

Section 9. Man Made World — Mr. Saunders
Instructor's field: Engineering

Section 10. Rainbows and Things — Mr. Reines
Instructor's field: Physics

Section 11. Existentialism and the Novel — Mr. Palley
Instructor's field: Spanish and Portuguese

Section 12. The Creative Act in Fiction — Mr. Hall
Instructor's field: English

Section 13. Versions of the Self — Mr. Lentricchia
Instructor's field: English

DEPARTMENT OF PHYSICAL EDUCATION

Classes in physical education are available to all students on an elective basis but are not required for graduation. Courses will be counted toward a degree at the rate of one-sixth of a course per class up to a total of one course credit.

Emphasis is placed on activities having lifetime values and those of particular interest in Southern California.

All sports facilities will be open for the recreational use of students and staff when not occupied by classes, athletic teams, or other scheduled events.

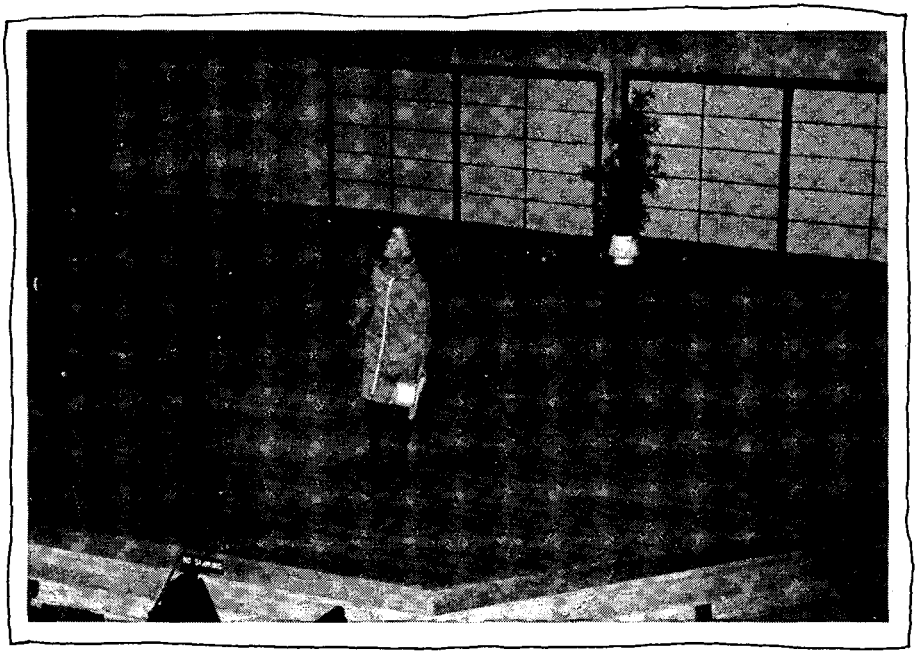
Physical Education Faculty

Raymond H. Thornton, Ph.D. University of Southern California, *Chairman and Director of Athletics*

Gary L. Adams, M.A. University of California, Los Angeles, *Recreation Sports Director*
Larry S. Banner, M.A. California State, Long Beach, *Lecturer in Physical Education*
Linda B. Dempsay, M.A. University of California, Berkeley, *Lecturer in Physical Education*
Robert G. Ernst, B.A. University of California, Irvine, *Lecturer in Physical Education*
Jerry C. Hulbert, B.A. San Diego State College, *Lecturer in Physical Education*
Albert M. Irwin, B.A. College of the Pacific, *Assistant Director of Athletics*
L. Maxwell Lockie, Jr. B.E.E. Syracuse University, *Associate Development Engineer*
Myron C. McNamara, B.A. University of Southern California, *Lecturer in Physical Education*
Edward H. Newland, B.A. Occidental College, *Lecturer in Physical Education*
Michael A. Purcell, B.A. University of California, Irvine, *Lecturer in Physical Education*
Carl H. Reinhart, B.A. University of California, Irvine, *Lecturer in Physical Education*
Richard B. Sweet, B.A., University of California, Santa Barbara *Lecturer in Physical Education*
Timothy M. Tift, M.A. Pepperdine College, *Lecturer in Physical Education*
Wayne A. Welk, *Sports Information Director*

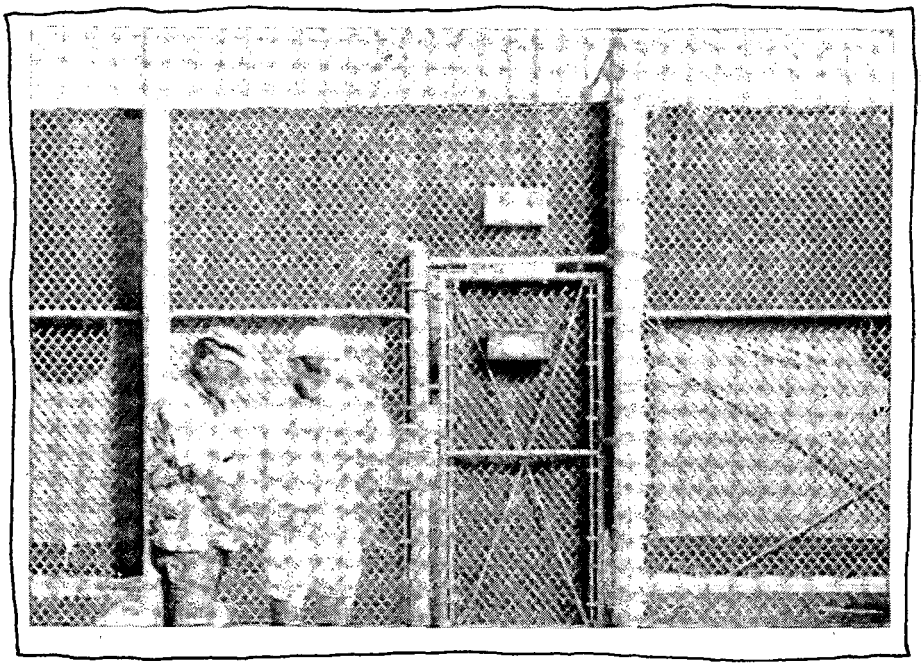
Courses in Physical Education

1A-B-C Physical Education (1/6-1/6-1/6) F, W, S
May be repeated. Sections in archery, badminton, cross country, equitation and horsemanship, fencing, gymnastics, golf, handball, judo, life saving, sailing, scuba diving, swimming, tennis, track and field, trampoline, volleyball, water polo, water safety instruction, individual exercise for women, and weight training.

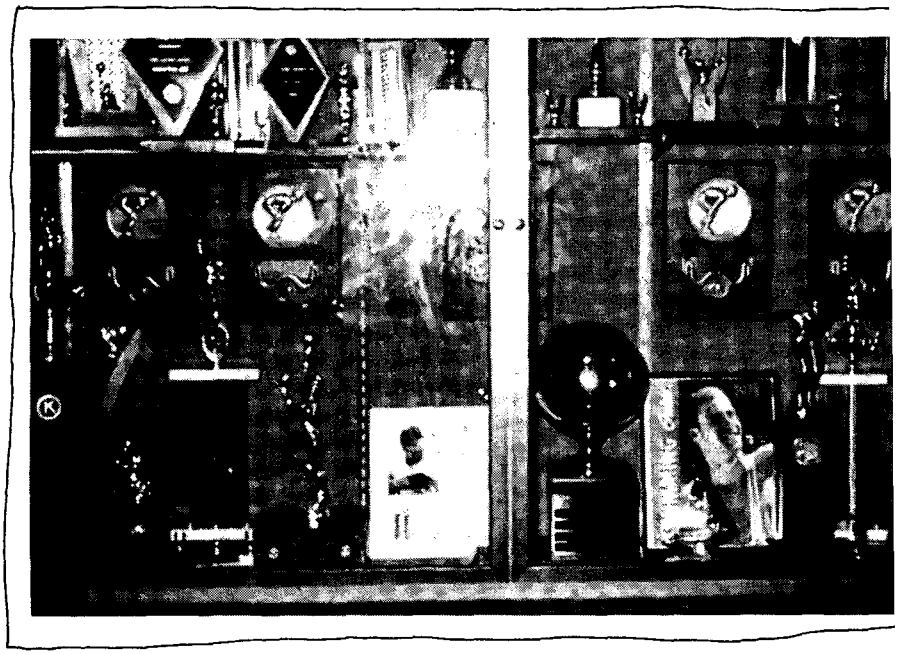


Remember me as Lady Macbeth?

Graduate & Professional Education



Mr. McNamara, the tennis teacher.



Graduate Division

Graduate study is a major aspect of the academic activity of the University of California, Irvine. Appropriate graduate degrees at the Master's and Doctor's levels, both those emphasizing the creative arts and creative scholarship and those emphasizing technical proficiency, are offered. The graduate student will be given full opportunity to further his development in a chosen discipline by course and seminar work and by research and other creative work to achieve excellence in such resources as English, foreign languages, mathematics, bibliography, and computer techniques; to develop some knowledge of the history of his broad area of interest; and to acquire some understanding of higher education in this country and some guided experience in teaching.

Admission to the Graduate Division is by the Graduate Dean on the advice of the department. A Bachelor's Degree, or the equivalent, with adequate coverage and academic excellence, is a prerequisite. Students are invited to consult the department of interest for details on necessary background; deficiencies can sometimes be overcome by taking further specified undergraduate work. Requirements for good standing and for the award of a higher degree are those of the University of California as a whole, supplemented by specific requirements of the Graduate Division, the school, and the department of specialization.

The Master's Degree

The M.A. or M.S. is normally attained by one of two routes: Plan I, a thesis; or Plan II, a comprehensive examination. Both require normally one year of residence on the campus, a foreign language as specified by the department, a certain number of courses maintained at a B average, and an appropriate demonstration of achievement. Plan I includes course work, a certain number of which must be at the graduate level, a thesis, and, usually, general examination in the particular field of study. Under Plan II, further course work replaces the thesis, and a more searching examination is administered. Opportunities for special preparation in teaching, as well as guided experience in actual teaching, will be offered by most departments. Other Master's Degrees, awarded for professional competence and often requiring more extended work, are also offered. School and departmental statements should be examined for details.

The Doctor of Philosophy

This degree is awarded on the basis of evidence that the recipient possesses knowledge of a broad field of learning and expert mastery of a particular sector of it. It is not a reward for diligence but an indication of critical judgment, synthetic understanding, and imaginative creativity. The dissertation is expected to demonstrate such abilities. Other Doctor's Degrees, marking profes-

sional attainment, and with correspondingly different emphasis, are also being offered. The M.D. is offered through the College of Medicine.

The candidate for the doctorate is expected to be in full-time residence on the campus for two years. Three to five years of full-time academic work beyond the Bachelor's Degree is normally required to complete the degree. During the first year or two of graduate work, the student is normally guided by a departmental advisor. When judged ready by the department, often aided by preparatory examinations, the student is encouraged to qualify for candidacy for the Doctor's Degree. At this time, a committee is appointed by the Graduate Dean, which henceforth supervises his graduate program.

The campus used to be part of Irvine Ranch

Graduate School of Administration

George W. Brown
Dean

The Graduate School of Administration offers programs of advanced study leading to the M.S. or Ph.D. degree in Administration. Through these programs individuals may prepare for significant roles in business or industry, in education, and in government. Among others, these roles include corporate managers, program directors, federal executives, state and local officials, urban and regional planners, administrators for all levels of the education system, organizational staff experts, political leaders, hospital administrators, managers of scientific or research enterprises, engineer-administrators, policy analysts, researchers, and faculty members.

Three basic assumptions underlie the School's philosophy of graduate education. First, there are significant phenomena and problems common to organizations in the areas of business-industry, education, and government. Second, a common set of disciplines, concepts, techniques, and technologies can be found which are appropriate to a wide range of organizational or scholarly roles. Third, many administrators in the future will work in more than one of the three areas during their careers.

Therefore, a need exists for a *general* professional and academic education that integrates the contributions of a variety of disciplines and perspectives toward handling these common administrative problems, whatever their specific organizational locale. The kind of generalist who should emerge from this experience should also be a *specialist* in two respects: he should have a reasonably thorough grasp of typical organizational patterns in *one* of several institutional realms having its own particular conditions and problems; and he should be able to approach organizational problems from the perspective of a particular discipline or interdisciplinary area or a set of technical methods developed beyond minimal required competence.

The M.S. program is intended to increase the likelihood that future leaders will be able to communicate effectively and move easily from one kind of organizational unit to another, thereby providing society with versatile managers and administrators. The Ph.D. program for the field of administration has the usual academic and research objectives.

From time to time the Graduate School of Administration will provide opportunities for persons working in government, education, and business for advanced study in a variety of forms including short courses, symposia, post-doctoral fellowships, and sabbaticals. Some of these special programs are currently being offered by UCI Extension (see Extension Bulletin).

Degrees Offered

Administration . . . . . M.S., Ph.D.

General Admission Requirements

In addition to the general University of California rules governing admission to graduate study, the Graduate School of Administration normally requires:

1. The Graduate Record Examination (verbal and quantitative parts).
2. Subject matter preparation:
   a. mathematics through calculus;
   b. elementary statistics;
   c. economics: one year of introductory study;
   d. psychology or sociology: one year of introductory study;
   e. political science: one year of introductory study.
3. A previously prepared paper (research report, essay, case study) which is indicative generally of the applicant's interests and capabilities.

Note: While some minor deficiencies in the above entrance requirements may not disqualify otherwise admissible applicants, the Graduate School of Administration expects such applicants to indicate the steps they would take to remove these deficiencies prior to or during their first year in residence.

Admission inquiries should be addressed to the Graduate Admissions Office of the UCI Graduate Division. Applicants for Ph.D. programs are requested to complete all phases of the application procedure by March 15. Those applying for the M.S. program are requested to complete applications prior to April 15.

Educational Objectives

Regardless of the content of particular courses, it is expected that all degree candidates will be exposed to, and have the ability to use, the following:

1. General Knowledge: The Broad Context of Organizations and Management: The mid-twentieth century (significant trends, conditions, and problems); history of science; scientific inquiry, and the philosophy of science; economic, political, and social analysis.
2. Conceptual and Empirical Knowledge of Organizations: Basic concepts of management; the structure and functions of organizations, including comparative analysis and inter-organizational relations; levels and units of decision-making; individual behavior and group norms; operating environments of organizations.
3. Specific Knowledge of Particular Arenas of Administration: Depth study of educational, governmental, or business-industrial organizations. (Sub-specialties; for example, the administration of scientific and research enterprises.)
4. Mathematics and Statistics: As tools of precise reasoning, as languages which will tend more and more to dominate professional and scholarly literature, and above all, as foundations for relevant quantitative methods.
5. Technical Bases of Management: Planning and decision processes; operations research; systems and policy analysis; budgeting and accounting tech-

niques; personnel policies; techniques for measuring and affecting attitudes and behavior; computer technology and information sciences; research design and strategies.

6. General Skills: Political skills, effective management of interpersonal relations, leadership strategies and tactics, and competence in oral, graphic, and written expression.
7. Professional Orientations: Identification of factors, values, and policies which might bear on successful, responsible, and intellectually honest performance of organizational roles. Recognition of the administrator's potential contributions to society and of ethical and moral problems which arise from social research and the management of human enterprises.

The following are some of the major kinds of learning experiences that may be provided: seminars; independent reading and tutorial relationships; self-instruction; faculty-student research partnerships; in-service training; use of computer technology; small group experiments; the case and comparative study methods; simulation; oral, graphic, and written expression; technical report writing; contact with practitioners; exercises in application of basic tools and techniques; teaching experience; and interdisciplinary team activity.

The Master of Science in Administration

The M.S. program is aimed primarily at preparing individuals for professional careers in administration. This program of study will normally take two full academic years, including, for some candidates, related work during either or both of the summers preceding the first and second years. Beyond the prescribed common first-year program, the second-year continuing seminar in an area of institutional specialization, and the required Workshop in Administrative Problem-Solving (for first- and second-year students), electives may be chosen on the basis of an evaluation of the candidate's general preparation in terms of the objectives of a professional degree. It is also considered desirable that M.S. candidates engage in teaching experiences during some portion of their two-year program, as opportunities become available.

In addition to the two-year program for students who have already received a Bachelor's Degree from this University or another institution, outstanding UCI *undergraduate* students may enter a cooperative "three-two" program with the approval of the Graduate School of Administration and of the appropriate undergraduate unit, such as the School of Social Sciences, the School of Engineering, the Department of Information and Computer Science, or appropriate departments. Students in such a program will spend their first three years in the cooperating field, followed by two years in the Graduate School of Administration. Successful completion of requirements in this program leads to a Bachelor's Degree in the cooperating field, usually after the fourth year, and a Master's Degree in Administration after the fifth year. Students contemplating entering such a three-two program should contact the Graduate School of Administration prior to, or early in, the start of their junior year, for the purpose of program consultation.

The Doctor of Philosophy in Administration

Given the objectives and educational activities associated with the Ph.D. degree, it is likely that at least three and probably four years (beyond the Ba-

chelor's Degree) of approximately full-time effort will be required. Whether all of this time will be spent "in residence" in the technical sense will depend in part on the pattern of in-service training or field research, or both. There are no formal course requirements as such associated with the Ph.D. program. Beyond the extensive preparation in core disciplines and areas of technical competence substantially equivalent to those that might be acquired in the Graduate School of Administration M.S. program, the Ph.D. must qualify as a skilled researcher and complete a significant exercise demonstrating these skills.

Students whose ultimate degree objective is the Ph.D. in Administration will normally enroll in the M.S. program unless they have already completed a substantial amount of closely related graduate work.

Planning a Program of Study (M.S.)

First Year

M.S. program requirements in force at time of preparation of this catalogue are presented below. Curriculum re-study currently in progress may result in substantial changes in the structure of courses and requirements, consistent with aims and objectives set forth above.

The first year of study has two fundamental aims: (1) to develop skills needed to select and use effectively the appropriate means, methods, and techniques for diagnosing and solving organizational problems; (2) to identify the significant concepts and phenomena associated with the study of complex organizations and to bring to bear the relevant contributions of the core disciplines or interdisciplinary sources on the analysis of organizations and the administrative process.

Required Courses:
200A-B-C Foundations of Administration
280A-B-C (Section 1) Workshop in Administrative Problem-Solving
Electives:
Within the context created by prior preparation and the workload obligations of the required first-year courses, students are encouraged to begin to intensify their study in a particular discipline (e.g., economics, psychology, mathematics, engineering, geography) or in a particular cross-discipline field (e.g., operations research, systems analysis, organizational behavior, regional planning). Students aiming toward the Ph.D. degree will need to begin to prepare themselves intensively in research design and methods, either through formal courses or collateral reading.

Second Year

The major emphases in the second year will be on the development of specialized knowledge relevant to particular institutions (i.e., education, business, or government organizations) and on achieving additional depth in a discipline or interdisciplinary area or specialized competence in the use of a particular set of technical tools and methods.

Required Courses:
210A-B-C (Section 1, 2, or 3) Continuing Seminar in Education, Business-Industry, or Government

280A-B-C (Section 1) Workshop in Administrative Problem-Solving
A seminar in one of the disciplines or a given interdisciplinary area.
Electives:
During the second year additional courses might be selected that would further the particular goals and interests of the individual student. These courses could be chosen from among seminars on Advanced Study in Special Topics (280 series), Independent Reading and Research (299 series), and Seminars in other departments and schools outside the Graduate School of Administration.

Graduate School of Administration Faculty

George W. Brown, Ph.D. Princeton University, *Dean of the Graduate School of Administration, Professor of Administration and Information and Computer Science*
Lyman W. Porter, Ph.D. Yale University, *Associate Dean of the Graduate School of Administration, Professor of Administration and Psychology*
A. Bradley Askin, Ph.D. Massachusetts Institute of Technology, *Assistant Professor of Administration*
Colin E. Bell, Ph.D. Yale University, *Assistant Professor of Administration*
Robert Dubin, Ph.D. University of Chicago, *Professor of Administration and Sociology*
Henry Fagin, M.S. Columbia University, *Professor of Administration, Research Administrator in the Public Policy Research Organization*
Stepan Karamardian, Ph.D. University of California, Berkeley, *Associate Professor of Administration and Mathematics*
Mei Liang O. Kato, Ph.D. University of California, Los Angeles, *Assistant Professor of Administration*
Kenneth L. Kraemer, Ph.D. University of Southern California, *Assistant Professor of Administration, Assistant Research Administrator in the Public Policy Research Organization*
Newton Margulies, Ph.D. University of California, Los Angeles, *Lecturer in Administration*
Alexander M. Mood, Ph.D. Princeton University, *Professor of Administration, Director of the Public Policy Research Organization*
Fred M. Tonge, Ph.D. Carnegie Institute of Technology, *Professor of Administration and Information and Computer Science* (on leave 1971-72)
John Wallace, Ph.D. Northwestern University, *Associate Professor of Administration and Psychology*

Associated Faculty

Robert E. Bickner, A.B. University of Florida, *Lecturer in Administration, Research Economist in the Public Policy Research Organization*
Julian Feldman, Ph.D. Carnegie Institute of Technology, *Professor of Psychology and Information and Computer Science*
Gordon Fielding, Ph.D. University of California, Los Angeles, *Assistant Professor of Geography and Administration*
John Hoy, M.A. New York University, *Senior Lecturer in Administration and Vice Chancellor — Student Affairs*

Courses in Graduate School of Administration

The following courses reflect the curriculum structure in the academic year 1970-71. Attention is directed to the first paragraph of the section "Planning a Program of Study" on page 296.

As a growing and evolving school, the Graduate School of Administration is continually evaluating alternative course structure possibilities. It is thus possible that some changes in the curriculum will be made prior to the student's arrival on campus. However, the School's philosophy and the goals of its programs will remain unchanged.

200A-B-C Foundations of Administration (3-3-3)
(Credit equivalent of three courses per quarter.) This course consists of three sequences. Sequences I and II will each require approximately four hours weekly of formal meeting time, and Sequence III will require approximately two hours weekly.

Sequence I: Quantitative Methods for Administration
Topics covered in this sequence include: probabilistic and statistical models and techniques for decision making including hypothesis testing, estimation and regression; also operations research models and techniques including linear and dynamic programming, queuing, network flows and simulation.

Sequence II: Organization Theories and Models
This sequence will focus on the description, analysis, and comparison of organizations, using points of view from such core disciplines as economics, political science, psychology, and sociology. Topics covered in this sequence include: environments of organizations; organizational goals and objectives; the structure of organizations; theories of management, leadership, and motivation; decision-making and problem-solving; interpersonal relationships and group influences; and interorganizational relationships.

Sequence III: Administrative Technology
This sequence will focus on administrative tools and techniques applied to such fundamental managerial activities as planning, organizing, staffing, budgeting, and coordinating. Topics covered in this sequence include: finance and accounting, manpower management, constituency analysis, operations management, policy analysis, decision processes, and information systems.

210A-B-C (Sections 1, 2, 3) Continuing Seminar in Education, Business- Industry, or Government (1-1-1)
The Continuing Seminar will be divided into three sections, each led by one or more faculty members. The sections will be devoted to an intensive exploration of a particular institutional area and its associated problems. Stress will be placed on a basic understanding of institutional policies, structures and processes, environmental challenges, and problems of growth and change. All three quarters of a particular section are required.

210A-B-C, Section 1: Educational Administration

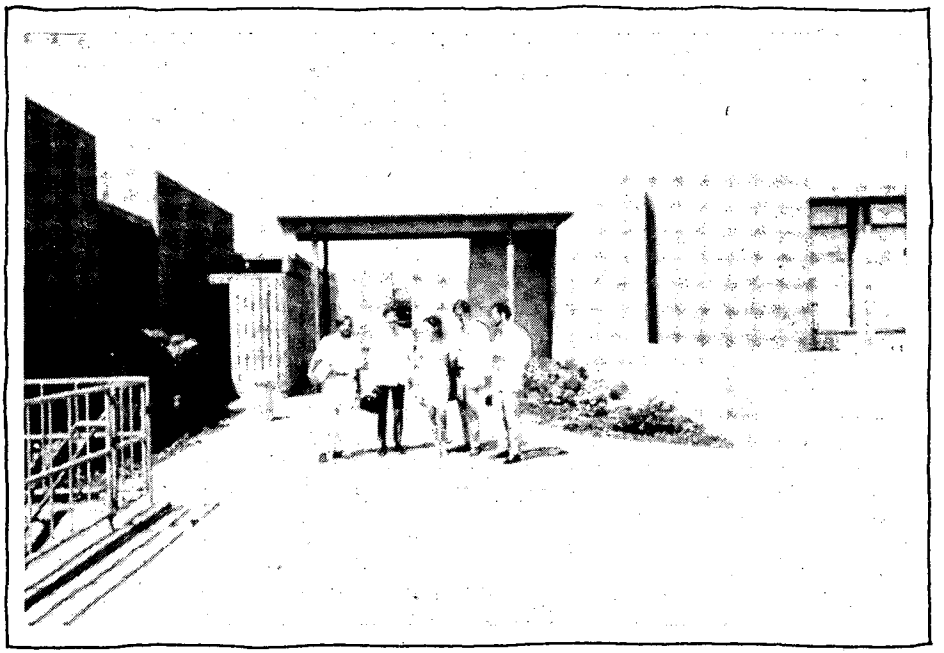
210A-B-C, Section 2: Business-Industrial Administration

210A-B-C, Section 3: Public Administration

280A-B-C (Section 1) Workshop in Administrative Problem-Solving (1-1-1)
This course provides an opportunity to exercise appropriate quantitative, behavioral, and technical skills in meeting and solving management problems from a variety of institutional situations. The Workshop is required of all M.S. students in the Graduate School of Administration, both in the first and second years.

280A-B-C (Sections 2, 3 . . .) Advanced Study in Special Topics (1-1-1)
Each quarter a limited number of optional special topic seminars will be offered on the basis of program needs and availability of faculty time. Examples of possible topics: Urban Research and Policy Planning; Interactions of Government and Business; Social Budgeting in Critical Policy Areas; Management of Research and Development; Regional Planning; Informational Systems; Dynamic Decision Processes; Optimization Methods.

299A-B-C Independent Research and Reading (1-1-1)
Supervised research and reading chosen on the basis of individual need. Variable credit. Seminars in departments of schools outside of Graduate School of Administration. Students are encouraged to enroll in whatever courses will meet their special interests or requirements. Enrollment is usually subject to approval of the instructor involved.



Betty and some medical students

Education of Teachers

Kenneth P. Bailey
Director of Teacher Education

Education as a discipline involves not only a systematic study of the theories, problems, and methods of teaching as preparation for classroom teachers, but also seeks to analyze education both as a process and as a cultural phenomenon. The degree to which the lives of a people are shaped and directed by their schools lends urgency to research into what is good, better, and best in educational policies and practice. The relationship between school and society, the learning process, the construction of curricula, the purposes and philosophy of education — these are all legitimate concerns of a university which would clarify the role of the teacher in the school and the role of the school in society.

The total faculty of the University assumes as one of its responsibilities the education of teachers for elementary and secondary schools and junior colleges. The Irvine plan diffuses the responsibility for teacher education throughout the various schools and departments. Those responsibilities are to be met through curricula combining subject matter concentration in teaching fields, studies seeking to relate theory and practice, and supervised teaching and internships designed to test education theory in teaching and to develop professional attitudes. Students planning to become teachers can qualify at UCI for the Standard Teaching Credentials with a specialization in Elementary teaching or with a specialization in Secondary teaching.

Preparation of Teachers at UCI

The program of preparation of teachers at UCI is divided into three areas. The first of these is the general education background. This requirement is covered by the University's 6-3-3 breadth requirement (see p. 24). The second area of the program is training in the subject matter to be taught. This includes both the undergraduate major and course work in the graduate school. The third phase of preparation of teachers is professional education and student teaching.

At the University usually the first two years of courses cover the general educational background, in addition to some training in subject matter. The next two years cover, in much greater depth, the preparation in subject matter, with possibly a small amount of attention to the training in teaching. About two-thirds of the fifth year are spent on training in Education and about one-third on further training in the subject matter area. In recent years, and particularly on the UCI campus, the training in subject matter not only has had the virtue of depth but has tended to have an additional dimension in breadth. Although a prospective teacher cannot be an expert in all areas of his major,

he can acquire some knowledge of the various areas through in-depth study in the major field. It should also be noted that the student needs training in subjects closely related to his academic area. For example, a physical science or social science major will need strong mathematics preparation.

In the third phase of this program of preparation of teachers, namely the training of teachers, the coverage is broad: training in methods of teaching, in use of multimedia, training in the area of responsibilities, teaching strategies for minorities, legal information, district procedures, discipline, levels of student ability, means of motivating the reluctant learners, and a number of other aspects of "good teaching."

Teaching Credentials

A fifth year of college work taken in the Graduate Division is required for any teaching credential. Students planning to become teachers can qualify at UCI for the Standard Teaching Credentials with a specialization in Elementary Teaching, with a specialization in Secondary Teaching, or in Junior College Teaching. The Standard Elementary Teaching Credential authorizes persons to teach in kindergarten and grades one through nine; the Standard Secondary Teaching Credential authorizes the teaching of subjects in the teaching major and teaching minor (not required) in grades seven through twelve (all grades of any senior high school, junior high school, or the seventh and eighth grades of an elementary school). The Junior College Credential requires an M.A. in an academic subject.

Requirements for either the Elementary or Secondary Teaching Credential are such that the student who completes the major at UCI (including the 6-3-3 breadth requirement) will have completed virtually all of the undergraduate courses essential to the credential. Thus it is not necessary for the undergraduate student to consult with the Office of Teacher Education until some time in his upper-division experience. The breadth of the Irvine graduation requirements simplifies the credential requirements to the point that the only deviation from a regular B.A. degree might be the inclusion of Education 171 and either 170, 172, or 175 during the junior or senior years, plus an English composition course more advanced than freshman English. Under the provisions of the Teacher Licensing Law of 1970 a course in reading is required of all secondary teachers. It will be effective January 1, 1972.

In addition to the regular credential program there is the possibility of enrolling in the Elementary Teacher Intern Program. In the intern program the student gets his B.A. degree, attends our summer session, and then goes to work as a regular teacher with a salary but under University guidance. We suggest that students who are aiming at the Intern Teaching program consult with the Office of Teacher Education.

A graduate year is defined as 45 quarter units of upper-division work. If the student is officially in a Master's Degree program so that legitimate graduate-level work is included, this number can be reduced. The fifth year for the credential program is three quarters only. The student is expected to be a full-time student and is admitted only for the three quarters. Work taken in Extension or in Summer Schools does not count as part of the three quarters. During the graduate year the student must complete for the Secondary Credential at least three courses in his major (or in his minor). A minor is not required,

but is recommended particularly for the Social Sciences, Biological Sciences, and Humanities students. The three subject matter courses required in the graduate year must be at the upper-division or graduate level. For the Elementary Credential no subject matter courses are required in the graduate year. To qualify for a credential the student is required to complete specified courses in Education and 12 units (three quarters) of supervised teaching. The sequence of Education courses is flexible. Undergraduate students may begin professional education courses during the upper-division years.

Fifth-year teacher credential students with exceptional records may in some departments be admitted to graduate seminars. For example, outstanding English students may be admitted to English seminars on a stand-by basis by petition to the Graduate Committee. The Committee will screen petitions as it normally would screen applications to the Ph.D. program, asking students for letters of recommendation, papers, or other evidence of achievement. With the exception of classes designed primarily for teacher credential students, enrollment in a given English seminar will be granted only after English Department graduate students have been assured of places in it.

Normally students may not use more than two courses from University Extension to fulfill the credential requirement, if the credential is to be obtained through the University. During this period of limited enrollment, exceptions can be looked at.

No student will be admitted to student teaching without completing a methods course at UCI.

Requirements for the Standard Teaching Credential with a Specialization in Elementary Teaching

A. The student must complete 17 courses, divided into five of the six areas listed below. The English and the advanced English composition courses are required in every case. Only three of these 17 courses may be in the major and/or three in any minor (i.e. 11 courses must be *outside* the major and minor fields). At least three courses must be upper-division or graduate courses in either the major or minor, but not mixed. Note that the completion of the UCI 6-3-3 breadth requirement will fulfill the *area* coverage of this requirement but not the number of courses required. The elementary teacher must complete a course in the theory of the structure, arithmetic, and algebra of the real number system (Mathematics 4A) or a course in calculus.

1. Humanities (history, English, speech, philosophy): The student must complete four quarters of English, including a course in English composition more advanced than English 5, 10, 15. English 139 is required.
2. Social Sciences (anthropology, economics, geography, political science, psychology, and sociology): Some course work in political science would fulfill the United States Constitution requirement described below.
3. Natural Sciences (biological and physical sciences).
4. Mathematics: Requires a knowledge of high school algebra and geometry as a prerequisite. For the Elementary Credential, the student must complete a course in the theory of the structure, arithmetic, and algebra of the real number system (Mathematics 4A) or a course in calculus.

5. Fine Arts (music, art, and drama).
6. Foreign Languages.

B. The following Education courses are required for the Elementary Credential program:

Education 170, 172, or 175;
Education 104A-B, 105A, 171;
Education 300A-B-C (Supervised teaching). Normally in the winter quarter of the graduate year the student will be expected to enroll in Education 300A, and in the spring quarter in 300B and 300C.

C. Students must also take course work or an examination given on the provisions and principles of the United States Constitution before the credential will be issued.

Requirements for the Standard Teaching Credential with a Specialization in Secondary Teaching

A. The student must complete the same basic requirements as listed above for the Elementary Credential, except that the 17 courses must be spread over four of the six areas listed.

B. The following Education courses are required for the Secondary Credential program:

Education 170, 172, or 175;
Education 101, 171;
Education 102 (Methods of Teaching in the Secondary School) *or* a Methods course in the subject to be taught. The student must choose a section of 102 that corresponds to his major teaching field. This course must be taken immediately preceding enrollment in student teaching (Education 320) or concurrently with it.

Education 320A-B-C (supervised teaching). Normally in the winter quarter of the graduate year the student will enroll in Education 320A, and in the spring quarter in Education 320B and 320C.

C. Course work or examination on the provisions and principles of the United States Constitution, as described in (C) above.

Majors and Minors for a Teaching Credential

To help the student determine his program of studies both in preparation for and in completion of the teaching credential, the "major" and "minor" requirements for both the Elementary and Secondary Credentials are detailed below.

Each section of the list below (A, B, C, or D) contains an acceptable combination of major and minor(s).

All majors: Professional education is excluded by law. Thirty-six quarter hours (nine courses) of upper-division or graduate-level work is required for all majors.

All minors: All must be commonly taught in public high schools.

A. Major: Academic subject commonly taught in public schools at appropriate level. An academic subject commonly taught in the public schools is one of the following:

1. A single academic subject of 36 quarter units (nine courses) of upper-division and/or graduate course work in one of the subjects within one of the following fields: physical sciences (chemistry, geology, etc.), social sciences (history, political science, etc.), humanities (English, speech, a single foreign language, philosophy), fine arts (music, art, and drama), or in the single subjects of mathematics or biological sciences. All the biological sciences (botany, zoology, biology, etc.) are a part of the single subject designated as "biological sciences." This biological sciences major for the Elementary Credential requires 42 quarter units.

2. When an applicant holds a degree with a major in an academic interdepartmental area such as social sciences, 36 quarter hours (nine courses) of upper-division or graduate course work must be offered, including 24 quarter hours (6 courses) in one of the subjects making up one of the following interdepartmental majors: physical sciences; social sciences; humanities; biological sciences and mathematics; a single physical science and mathematics; and fine arts.

Minor: No minor is required, but if desired, one or more of the following:
1. 30 quarter hours of lower- and upper-division courses in a single academic or non-academic subject, *or*

2. 30 quarter hours in an academic interdepartmental area (as described under the Major in A.2 above), including 20 quarter hours in one subject.

B. Major: Academic subject not commonly taught in public schools.

Minor: Two minors that are commonly taught in public schools are required* (30 quarter hours each). One must be academic; the other may be non-academic.

C. Major: Non-academic subject commonly taught in public schools.

Minor: Must be a single academic subject* (30 quarter hours, including 20 quarter hours at the upper-division or graduate level), *or* 30 quarter hours in an academic interdepartmental area,** including 20 quarter hours in one subject of which 12 quarter hours must be upper-division or graduate level.

D. Major: Non-academic subject not commonly taught in public schools.

Minor: Two minors (30 quarter hours each) in academic subjects commonly taught in public schools are required. In an interdepartmental area,** 30 quarter hours with 20 quarter hours in one subject constitutes a minor.

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*A single subject minor, academic or non-academic, consists of 30 quarter hours in one subject. (Eight quarter courses are equivalent to 32 quarter hours.)

**An academic interdepartmental minor consists of 30 quarter hours including 20 quarter hours of the following interdepartmental minors: physical sciences; social sciences; humanities; biological sciences and mathematics; a single physical science and mathematics; and fine arts. (Eight quarter courses are equivalent to 32 quarter hours.)

Education of Teachers Faculty

Kenneth P. Bailey, Ph.D. University of California, Los Angeles, *Director of Teacher Education*

Howard A. Appel, M.A. University of Washington, *Supervisor of Teacher Education (Foreign Languages)* (on leave 1970-72)

Frances J. Craig, M.S. University of Southern California, *Supervisor of Teacher Education (Intern Teachers)*

Richard A. Denholm, Ed.D. Western Reserve University, *Supervisor of Teacher Education (Mathematics and Science)*

John A. Dunn, M.A. California State College at Los Angeles, *Supervisor of Teacher Education (Art, Dance, Drama)*

James E. Dunning, Ph.D. Claremont Graduate School, *Lecturer in Education (Social Sciences)*

Robert E. Letro, M.A. California State College at Long Beach, *Supervisor of Teacher Education (History and Social Science, Media)*

Sara W. Lundsteen, Ph.D. University of California, Berkeley, *Supervisor of Teacher Education (Elementary)*

Jack R. McCullough, M.A. Pennsylvania State University, *Supervisor of Teacher Education (Music; Elementary)*

Ada L. Nix, *Credential Counselor*

Leonard Olguin, M.A. California State College at Los Angeles, *Supervisor of Teacher Education (Elementary)*

Myron Simon, Ed.D. University of Michigan, *Supervisor of Teacher Education (Secondary) and Associate Professor, Department of English*

Courses in Education of Teachers

Either Education 170, 172, or 175 should normally be the first education course in which the student enrolls.

100A Educational Strategies for Tutoring the Bi-Lingual Child (1)
This course is concerned with the developing of cognitive learning with the bi-lingual and the bi-cultural child. Bi-lingualism and bi-culturalism are given a broad meaning to include minorities. The student studies the problems of the bi-lingual and bi-cultural youngster, receives regular instruction in teaching strategies, but is primarily concerned with on-the-job training in a one to one situation in tutoring. This is a laboratory experience.

100B Problems and Theories of Teaching the Bi-Lingual Child (1)
Includes instructional procedures, materials, theory, and problems involved in the teaching of the bi-lingual child, including both Mexican-American and Black children. Visitations to various institutions are included. Black and Brown social values and ethnic characteristics are studied as a part of a tutorial program.

100C Cross-Age Helping Techniques (1)
This course is designed to develop instructional strategies and resources which can be used in effective cross-age and cross cultural tutoring. The student will apply this information both to the tutoring scene and making student resources available in any kind of classroom situation.

101 Secondary School Curriculum and Organization (1)
The course relates both to the historical and current practices in curriculum concepts and procedures. Special attention will be directed to curriculum procedures and developments in the student's major and minor.

102 Methods of Teaching in the Secondary School (1)
All sections of 102 are normally completed in the fifth year. A laboratory course covering scope and sequence in instructional program in general and in the student's major and minor in particular. Observing and participating in the secondary classroom are required. This course includes extensive study in educational media: films, filmstrips, overhead presentations, television, the computer, and other educational technology. This course is to be taken in the graduate year immediately prior to supervised teaching or concurrently with it. The student enrolls in the field of his major.

102A Methods of Teaching Foreign Languages in the Secondary Schools (1)
Prerequisites: Linguistics 100 and senior standing as a Foreign Language major.

102B Methods of Teaching History and the Social Sciences in the Secondary Schools (1)
This course presents a critical examination of the secondary school curriculum, principles, and methods in developing instructional programs in Social Science. The "new" Social Science framework for California is presented and workable teaching strategies are demonstrated. The course requires visitation and participation in public schools.

102C Methods of Teaching English in the Secondary Schools (1)
Principles and methods in developing instructional programs in English for the secondary schools; includes attention to the articulation of the English curriculum. Emphasis will also be placed on the rationale and research underlying the current programs of English, including their effectiveness. The course requires visitation and participation in public school English classes.

102D Methods of Teaching Music in the Secondary Schools (1)
The music major needs to relate to the public school curriculum in music which is performance oriented, although with increasing emphasis on music education and on humanities. This course covers the basic concepts of music education with its application to the secondary schools. Includes a study of secondary school music materials and demonstration of teaching strategies which produce results in the schools.

102E Methods of Teaching Art in the Secondary Schools (1)
Theory and understanding of teaching strategies in the high school arts and crafts programs. Works on developing skills appropriate to the high school student. Includes art in the humanities program.

102F Methods of Teaching Mathematics and Science in the Secondary Schools (1)
Theories and understanding of teaching strategies in high school mathematics programs. Particular emphasis is placed upon new mathematics and upon inquiry styles in science.

103 Liberal Arts Mathematics (1)
Designed for students in elementary education, the course is intended to develop insight into number systems and other phases of modern mathematics. The structure, arithmetic, and algebra of the real number system, including representations of numbers (binary arithmetic) are included.

104A-B Elementary School Curriculum, Organization and Methods (1-1)
A laboratory course covering scope and sequence in elementary education, including current developments and methods in the mandated areas which most elementary teachers are required to teach. Students are required to observe and participate a minimum of two hours per week in selected public elementary schools. This course includes audio-visual materials and techniques and other educational media, classroom organization, management, control and evaluation.

104A covers language, literature, and social science methods. 104B includes detailed laboratory study of methods of teaching arithmetic and science.

104C Curriculum and Methods in the Elementary School: Foreign Language (1)
The audio-lingual method of teaching foreign languages at the elementary level. Examination and development of materials; evaluation; articulation with secondary schools.

105A Curriculum and Methods in the Elementary School: Reading (1)
Principles and methods of developing instructional programs in reading: participation in schools. This course includes the study of phonics as well as the various methods of teaching reading.

105B Reading in the Secondary Schools (1)
A study of various reading programs. This course includes four hours per week in laboratory assignment.

105C Curriculum and Methods in the Elementary School: Early Childhood Education (1)
This course will be a critical study of the pre-school child, his kindergarten experiences, and his years in the primary grades. Curriculum and teaching strategies will be the prime content. The laboratory experience will be in the Verano Place Pre-school.

106 Education of the Pre-School Child (1)
Includes a critical study of Early Childhood Education and implications for the curriculum of the nursery school and the kindergarten; studying the development of critically significant school programs, based on examination of pre-school and non-school experiences of young children. Two campus connected pre-schools, the Verano Place Pre-school and the Social Science Pre-school support this laboratory oriented program.

107 Children's Literature (1)
Includes the history of children's literature, major authors and illustrators, and their work. All types of children's literature will be studied. Methods for promoting children's interest in literature, trends in writing, research findings, and the effect of differential socio-cultural backgrounds upon children's interests in literature will be analyzed.

170 History of Education (1)
Course covers the development of educational experiences in this country with special reference to educational issues and problems.

171 Psychological Foundations of Education (1)
Same as Social Science 139R. Covers the learning process in school situations, the evaluation of learning, application of psychological principles to problems of learning and development. Major topics include learning, personality development, social interaction, and theories of instruction, educational measurement and evaluation, construction and interpretation of evaluation procedures. Included will be a study of the problems and prospects of the minority child, including a consideration of testing and teaching techniques available to the teachers of the minority child, and an introduction to a critical analysis of research on minority children and a study of the psychology of the bi-lingual and bi-cultural personality of minority youngsters.

172 Sociological Foundations of Education (1)
Same as Social Science 123X. Influence of social structure in schools, school systems; American cultural values and their influence on education; particular emphasis is placed on problems of ethnic and culturally different students in schools in the United States; the school system as formal organization in American society. Included is an examination of the conditions of social and political interaction between the minority citizen and the institutions of the United States. Included will be an examination of the sub-cultures of American minorities and the minority's view of the school and society.

175 Philosophy of Education (1) F
Same as Philosophy 175. Theories of education, past and present. The aims and methods of education. The philosophical assumptions about the nature of man and

the nature of human knowledge on which theories of education are based. Among the theories discussed will be those of Plato, Augustine, Rousseau, Locke and Mill, Dewey, Whitehead, the Freudians, and the Behaviorists.

180 Special Topics: Curriculum and Methods (1)
This is an advanced course in curriculum and assumes that the student has already completed some phase of curriculum work, either elementary or secondary. It is tutorial in nature.

181 Principles of Curriculum Construction Covering Curriculum K-12 (1)
This course will study the basis for making public school curriculum decisions; theories, principles, and background for operational techniques for public school curriculum planning; strategies and development of educational programs in general, liberal, and professional education.

183 Principles of Elementary Curriculum Instruction (1)
This course is basically a study of implementation and procedures of elementary curriculum and the various statewide frameworks in the subject matter areas. Adopted textbooks are studied. This is not regarded as a methods course. Includes weekly observation in the schools.

190 History and Philosophy of Classical Education (1)
A historical study of early European education.

191 Experimentation in Media of Communication and Instruction (1)
The primary purpose of the media course is to involve future teachers with media resources, techniques, and new teaching strategies in their respective fields. "Media" includes printed materials, audio and visual materials, programmed materials, educational technology, and combinations of these as organized systems of learning.

193 Learning Disabilities in the Schools (1)
Definition and nature of learning disabilities; means of recognition, diagnosis, and remediation of learning disabilities as manifested in intermediate and high school students.

194 Organization and Administration of Public Education Systems: Elementary and Secondary (1)
Theoretical and functional aspects of elementary and secondary school administration and supervision in varied organizational structures. Includes principles of administration applied to organization and management of schools. Emphasis is applied upon administrative-supervisory aspects of curriculum design and planning.

197 Individually Arranged Field Study (1)
In this course a student plans a field study program with a member of the department. The student is expected to have sufficient background to undertake the field study and the area of study has to be within the competence of the sponsoring faculty member. It is expected that there will be regular individual meetings with a faculty member and that the student will prepare a regular report relating his field experience to his academic training.

198 Directed Course Study on Special Topics (1)
This course consists essentially of a program of laboratory experiences in the public schools set up and conducted for persons who are in advanced levels of teacher preparation.

199 Individual Study (1)
Intensified advanced study in areas in which the student has by dint of earlier work obtained considerable knowledge but now wishes to obtain more specified training. In group study courses on special topics the faculty member in charge is responsible for supervision of each student's work. This program represents intensified advanced study in particular areas.

300A-B-C Supervised Teaching in the Elementary School (1-1-1)
Must include 180 clock hours of actual teaching in a course in student teaching.

301 Secondary School Curriculum and Organization (1)
The course relates both to the historical and current practices in curriculum concepts

and procedures. Special attention will be directed to curriculum procedures and developments in the student's major and minor.

310A-B-C Intern Teaching in the Elementary School (1-1-1)
Must be a contract intern with a school district and be enrolled in graduate status at the University.

320A-B-C Supervised Teaching in the Secondary School (1-1-1)
Must include 120 clock hours of actual teaching in a course in student teaching. Only two of these courses may be taken concurrently.

330A-B-C Intern Teaching in the Secondary School (1-1-1)
Must be a contract teacher with a school district and be enrolled in graduate status at the University.

Betty wanted to hear the band again

College of Medicine

Warren L. Bostick, M.D.
Dean

Good health in its broadest sense—physical, mental, social, and environmental—is recognized as a necessity in our society. Our expanding population, with its expanding needs for health care, demands an ever increasing number of physicians in all specialties and an increasingly better use of those physicians we are training. At the same time, investigators in the field of medicine must be trained, for medical science cannot advance without the creation of new knowledge about health and disease; and dedicated, skilled teachers are needed to bring this new knowledge to students.

The College of Medicine recognizes three responsibilities: to create knowledge through research; to disseminate knowledge through teaching; and to make knowledge available to members of the medical community through continuing education programs. The College also recognizes its responsibility for developing in its students an attitude of compassion, of sympathy with and understanding for patients as individuals within a total social and economic environment.

Facilities

Preclinical instruction at the College of Medicine is conducted in facilities on the Irvine campus, which include departmental offices and laboratories, student multidiscipline laboratories, and academic support units such as the medical sciences library, biometrics laboratory, electron microscopy suite, and vivarium. Lecture rooms are equipped with an electronic response system which allows instructors to obtain immediate feedback on the effectiveness of their presentations. Students can watch televised surgical operations and clinical procedures in color on videotape from the studio at UCI's major affiliated teaching hospital or live from the clinics and operating rooms; a two-way audio system permits students to ask questions during the procedures.

Final architectural plans for the College's first major facility, Medical Sciences I, will be completed in 1971, and the building will be occupied in the fall of 1973. This is to be followed by a University hospital (Medical Sciences II), to be occupied in 1976. Medical Sciences III, a clinical sciences facility, will complete the basic requirements for the medical educational program and form the nucleus of the 150-acre health sciences complex at UCI.

Clinical instruction is conducted at various affiliated hospitals:

—Orange County Medical Center, a 420-bed general hospital owned and operated by the County of Orange, is a major teaching and research facility. It is staffed by members of the College of Medicine faculty. Medical students receive a portion of their medical training in every clinical area at the Medical Center.

—The Veterans Administration Hospital in Long Beach has 1,675 beds with training emphases in medicine, surgery, psychiatry, physical medicine, and rehabilitation.

—Memorial Hospital of Long Beach, a non-profit hospital with 545 beds, is a major teaching facility for medicine and pediatrics.

Other hospitals used by individual departments to extend the clinical and research training include Childrens Hospital of Orange County, Metropolitan State Hospital, and Fairview State Hospital.

Medical Curriculum

In a departure from the traditional structure of medical school courses, the College of Medicine has instituted a new curriculum featuring a close correlation between the basic sciences and clinical disciplines. The first year of study consists of four quarters in which the primary emphasis is on the sciences basic to medicine, illustrated and extended by clinical correlations whenever applicable. Emphasis in the second year is on clinical core subjects, with the remaining third and fourth years serving to extend the student's understanding of disease, therapy, and the basic sciences in certain areas of his election. The electives include research training, advanced clinical clerkship opportunities, and depth elective studies leading to ultimate specialization.

The course plan is flexible enough to allow talented students to complete requirements for the M.D. degree in three years instead of four and also permits certain students to study concurrently for the M.D. and Ph.D. degrees.

Internship and Residency Programs

The College of Medicine offers professional postdoctoral programs for interns and residents at its various affiliated hospitals. The intern program includes rotating internships as well as straight internships in medicine, gynecology and obstetrics, pathology, pediatrics, and surgery. The resident program offers curricula in several disciplines. All programs meet the formal standards of the American Medical Association and the appropriate specialty boards.

Admission

The College gives equal consideration to applicants of all ethnic and racial backgrounds, religious preferences, and to both men and women. All are encouraged to apply.

First-year students are admitted only in July of each year.

A student formerly enrolled in the College may be required, before readmission, to pass examinations in the subjects previously completed.

Candidates for admission to the first-year class in the College must meet the following requirements:

1. The candidate must have completed a four-year high school course, or its equivalent, acceptable for enrollment in the college of letters, arts, and sciences of an accredited university, college, or junior college.

2. The candidate for admission must have completed, with demonstrated superior scholarship record, a minimum of three full years of premedical work; this work must total not less than 90 semester units or an equivalent number of quarter units and be acceptable for Bachelor's Degree credit in an accredited institution of higher learning. The number of units carried is to be the amount necessary to complete the Bachelor's Degree requirements in no more than four years. Candidates for admission may submit junior college credit only to the extent granted on transfer to a four-year college or university. For scholarship evaluation, actual letter or numerical grades in courses are highly desirable and are essential in the areas of required subjects. The following minimum specified subjects of premedical work are offered as a guide to the candidate:

	Semester Units	Quarter Units
Chemistry	16	24
General Chemistry Quantitative Analysis Organic Chemistry		
Physics	8	12
Biology (total)	12	18
General Zoology Vertebrate Embryology		

These courses serve as a practical foundation for work in the medical college. Additional work in the sciences does not necessarily improve the applicant's prospect of admission, but courses in mathematics (calculus, statistics), comparative anatomy of the vertebrates, and genetics are considered to provide a stronger premedical foundation and are looked on with favor. Duplication of medical curriculum subjects is not an advantage (i.e., anatomy, physiology, or bacteriology).

Premedical students are advised to take advantage of the opportunity for intellectual maturation afforded by a well-rounded liberal arts curriculum. The study of English is of particular importance.

The applicant should direct any questions he may have regarding the acceptability of a course to the Office of Admissions.

3. The candidate must attain a satisfactory score in the Medical College Admissions Test. The score report for this test must be received by the Admissions Office of the College before acceptance may be granted. Inquiries regarding this test should be addressed to the Medical College Admissions Test, The Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.

4. A personal interview with a member of an Interview Committee is required of the candidate after preliminary consideration of his application for admission. Letters of recommendation from college professors are invited. Candidates for interview will be notified of the date. Those candidates who live a considerable distance from the Irvine campus may be interviewed by someone designated by the College of Medicine. An interview does not guarantee admission.

Western Interstate Commission for Higher Education

The College of Medicine participates in the student exchange program of the Western Interstate Commission for Higher Education, under which qualified legal residents of western states without medical schools—Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, and Wyoming—are given a reduction of tuition and fees. To be eligible for this program, the student must apply to the WICHE certifying officers in his own State. For addresses of certifying officers, write to the Western Interstate Commission for Higher Education, University East Campus, Boulder, Colorado 80304.

Procedure for Admission

The College is a member of the Association of American Medical Colleges Application Service (AAMCAS) as of the application year 1972. Requests for applications may be submitted to the College or directly to the Association of American Medical Colleges, One Dupont Circle N.W., Washington, D.C. 20036. All AAMCAS applications will be reviewed by our Admissions Committee. An applicant may then be requested by us to submit additional material consisting of letters of recommendation, supplemental transcripts, Health History, Personal Information Form, two photographs, and a fee of $20.

No additional material should be submitted until requested by the College.

Applications may be submitted at any time between June 1 and December 15 of the year preceding that into which entrance is desired.

No application for admission will be accepted which does not clearly indicate that all the required subjects will have been completed by the date of entrance.

Selection of Candidates

The fulfillment of scholastic entrance requirements and the ability to pay tuition and other fees do not of themselves constitute a right to study medicine. This privilege is sought by many more applicants than educational facilities can accommodate. The privilege is granted, by action of the Admissions Committee and the Dean, to those who possess, in addition to scholarship, other attributes important in the physician. Ethnic background and religious and political convictions do not enter into the consideration of the Committee. Those students selected to enter the program must continue throughout the course to demonstrate their ability and worthiness to assume the responsibilities of the physician.

No candidate for admission will be considered who has been dismissed from any college, university, or other professional school. If the applicant has attended another professional school, he must submit complete, official transcripts and a letter of honorable dismissal from that school.

Notice of Appointment

The Dean of the College will notify the candidate of his appointment as soon as his application has been acted upon by the Admissions Committee. Written acceptance of the appointment, accompanied by an acceptance fee of $50.00, must be sent to the College within two weeks after receipt of the notice of appointment. This fee will be applied against the University registration fee for the first quarter. Should an applicant accept admission and then decide to withdraw prior to March 1 of the year of anticipated admission, this fee will

be refunded; after that date no refund shall be made. This is in keeping with the recommendations of the Association of American Medical Colleges.

Recommended Acceptance Procedures of the Association of American Medical Colleges

These acceptance procedures have been approved by the Executive Council of the Association of American Medical Colleges upon recommendation of the Committee on Research and Education. Both applicants and schools are responsible for abiding by their spirit.

1. No offer of admission to medical school should be made to an applicant more than one year before he will enter the course of instruction offered by the medical school. Under special circumstances a school may make an offer more than one year before the expected entrance date to encourage the educational development of the student, but all such offers should state explicitly that the student is completely free to apply to other schools at the usual time.
2. When an offer is made to an applicant, he should have not less than two weeks in which to reply.
3. The student who receives an offer prior to February 15 may be required to file within two weeks a statement of intent, or a deposit, or both. The statement of intent should leave the student free to withdraw if he is accepted by another school he prefers; and the deposit, which should not exceed $100, should be refundable without question if the request for refund is made before March 1.
4. Offers made after February 15 may require a reply within two weeks, and also a deposit, not to exceed $100, which may be credited against tuition charges if the student enrolls in the school, and which may be forfeited if he does not.
5. Each medical school should prepare and distribute to applicants and college advisors a detailed schedule of its application and acceptance procedures and should adhere to this schedule unless it is publicly amended.
6. No medical school should use any device which implies that acceptance of its offer creates a moral obligation to enroll at that school. Every accepted applicant should know that he is free to deal with other schools and accept an offer from one of them even if he has paid a deposit to another school and must forfeit it. Every accepted applicant does retain under all circumstances an obligation to notify a school promptly if he decides not to accept its offer to him, and to withdraw at once if, after accepting an offer from a school, he receives and accepts an offer from another school he prefers.
7. Each school is free to make appropriate rules for dealing with accepted candidates who hold without adequate explanation one or more places in other schools. These rules should recognize the problems of the student who has multiple offers, and also of those applicants who have not yet been accepted. All inquiries should be addressed to:

   Office of Admissions
   College of Medicine
   University of California, Irvine
   Irvine, California 92664

Faculty

Bruce D. Ackerman, M.D. University of Chicago, *Assistant Professor of Pediatrics*

Harold J. Allen, M.D. University of California, Los Angeles, *Assistant Professor of Medicine (Dermatology)*

Charles S. Arminski, M.D. California College of Medicine, *Assistant Professor of Physical Medicine and Rehabilitation*

Edward R. Arquilla, M.D., Ph.D. Western Reserve University, *Professor of Pathology and Chairman of the Department*

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* William H. Fellner, Ph.D. University of California, Berkeley, *Acting Assistant Professor of Medicine*

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*Joint appointment with School of Physical Sciences.

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Albert Globus, M.D. Northwestern University, *Assistant Professor of Anatomy*
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*Joint appointment with School of Biological Sciences.

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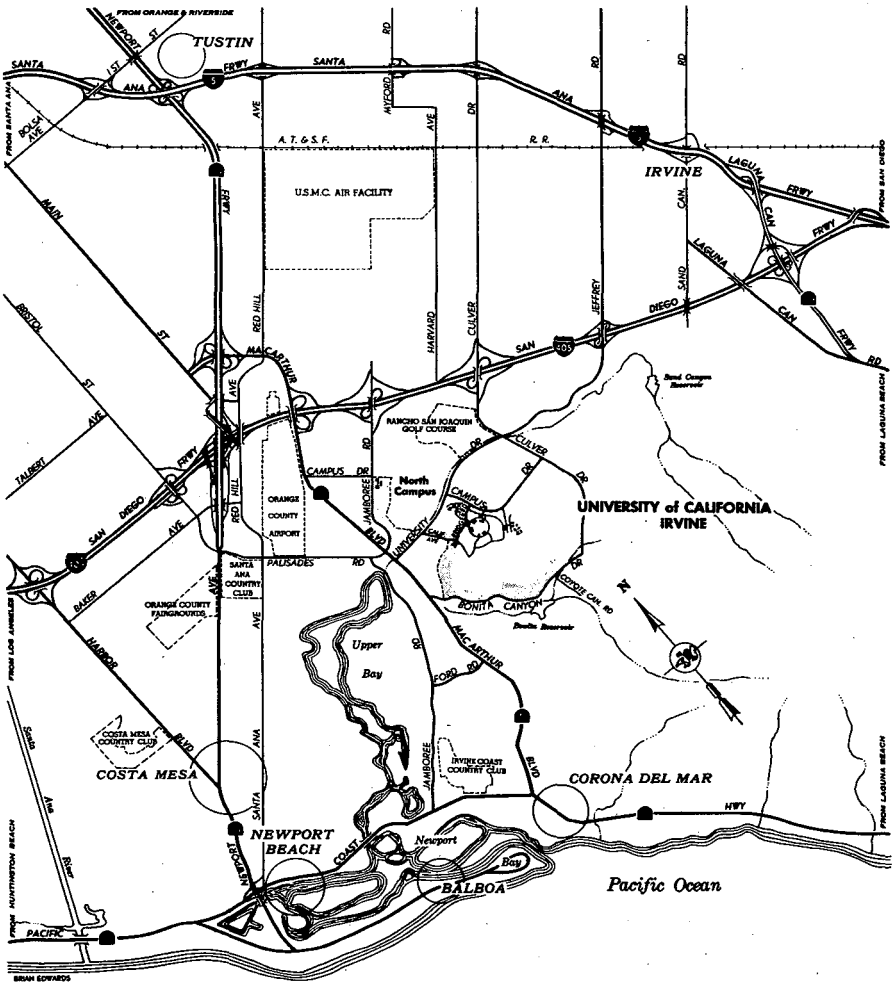
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IRVINE
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A. T. & S. F.
R. R.
RANCHO SAN JOAQUIN GOLF COURSE
North Campus
UNIVERSITY of CALIFORNIA IRVINE
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BONITA CANYON
Bonita Reservoir
Bond Canyon Reservoir
PACIFIC
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FROM SAN DIEGO
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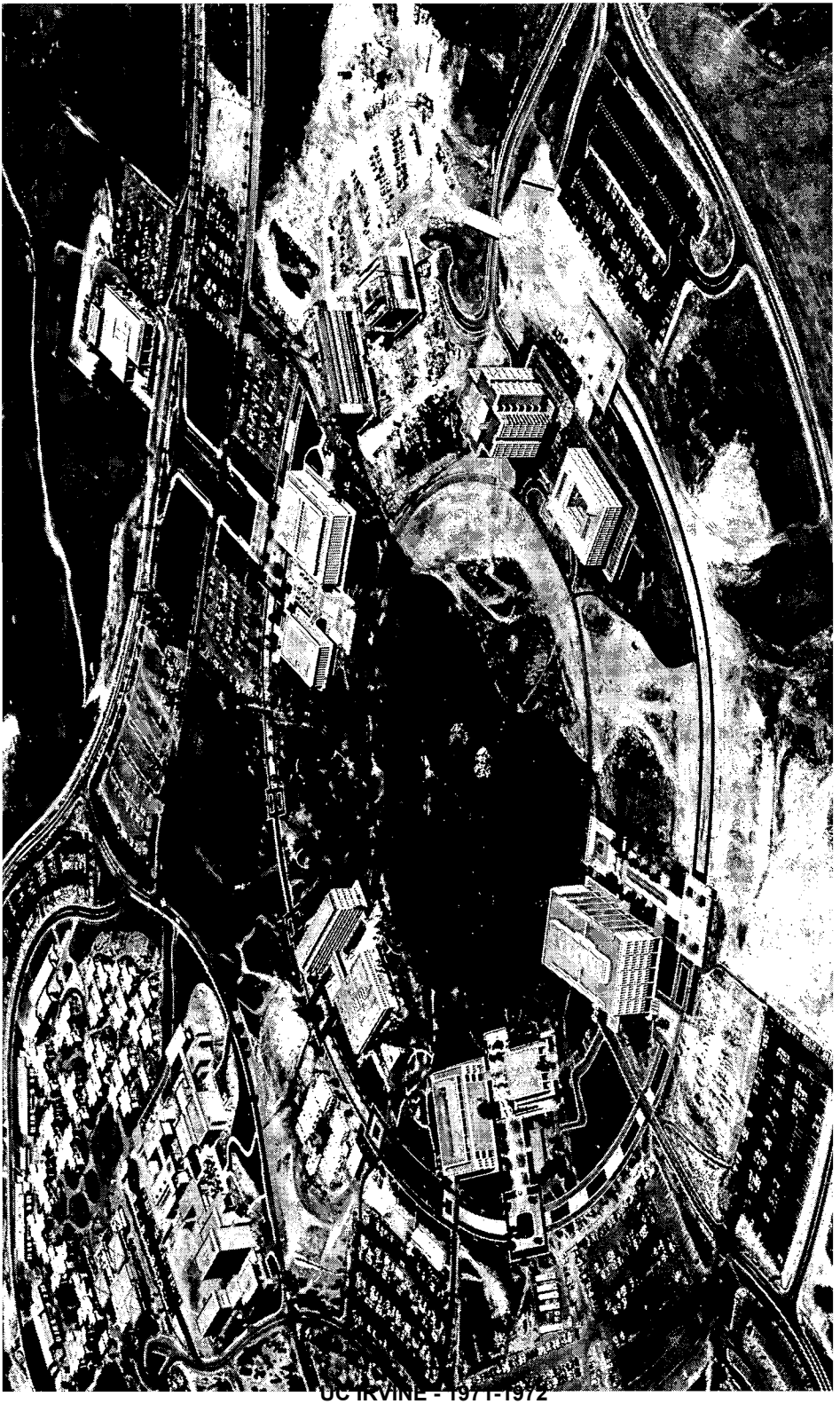

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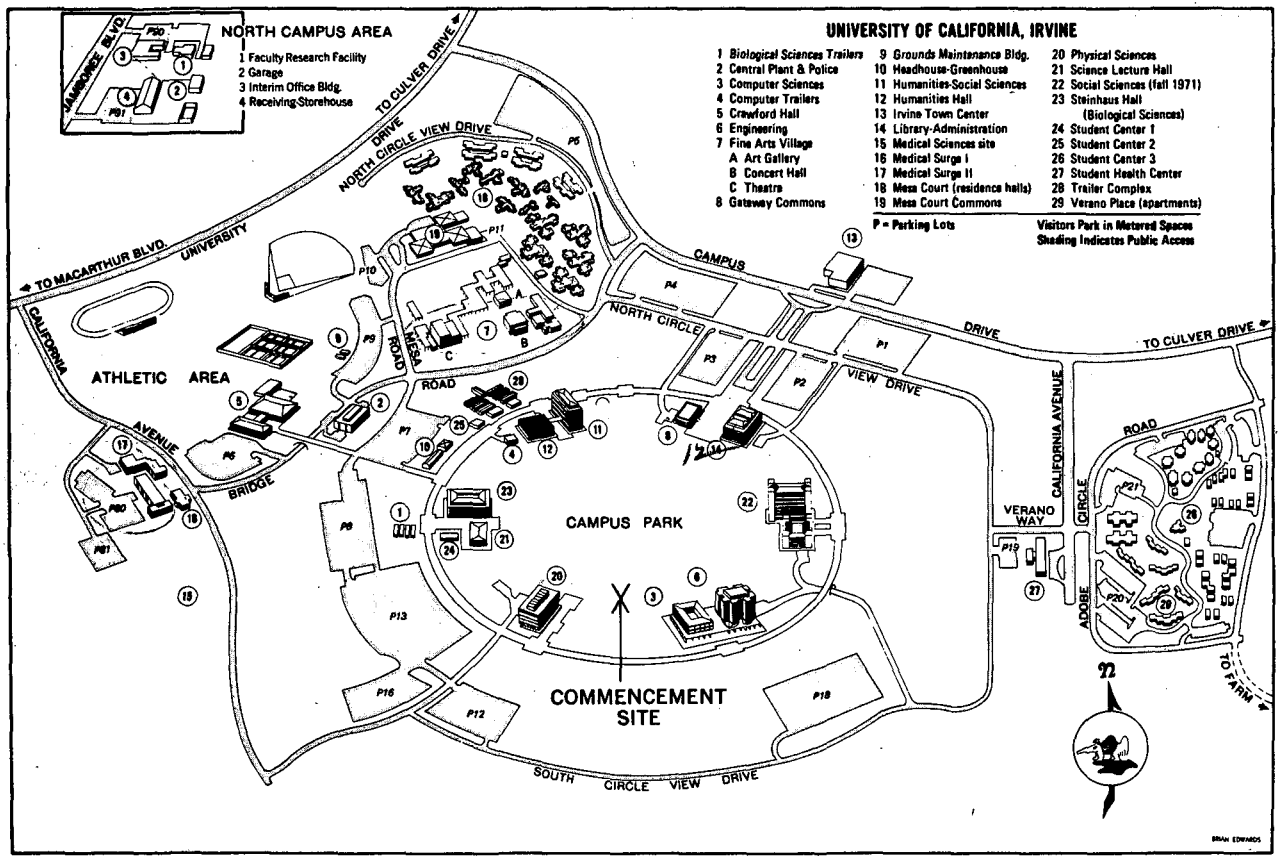
NORTH CAMPUS AREA
1 Faculty Research Facility
2 Garage
3 Interim Office Bldg.
4 Receiving-Storehouse
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UNIVERSITY DRIVE
TO CULVER DRIVE
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TO MACARTHUR BLVD.
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MESA ROAD
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6 Engineering
7 Fine Arts Village
A Art Gallery
B Concert Hall
C Theatre
8 Gateway Commons
9 Grounds Maintenance Bldg.
10 Headhouse-Greenhouse
11 Humanities-Social Sciences
12 Humanities Hall
13 Irvine Town Center
14 Library-Administration
15 Medical Sciences site
16 Medical Surge I
17 Medical Surge II
18 Mesa Court (residence halls)
19 Mesa Court Commons
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21 Science Lecture Hall
22 Social Sciences (fall 1971)
23 Steinhaus Hall (Biological Sciences)
24 Student Center 1
25 Student Center 2
26 Student Center 3
27 Student Health Center
28 Trailer Complex
29 Verano Place (apartments)
P = Parking Lots
Visitors Park in Metered Spaces
Shading Indicates Public Access
BRIAN EDWARDS

MAPS 323

Index

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Our heartfelt thanks to Francisco Perez & Ken Russon for the time and effort they spent and to our models, Bud & Ameli Desenberg, Pia Gregan and Phil Riddick.

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