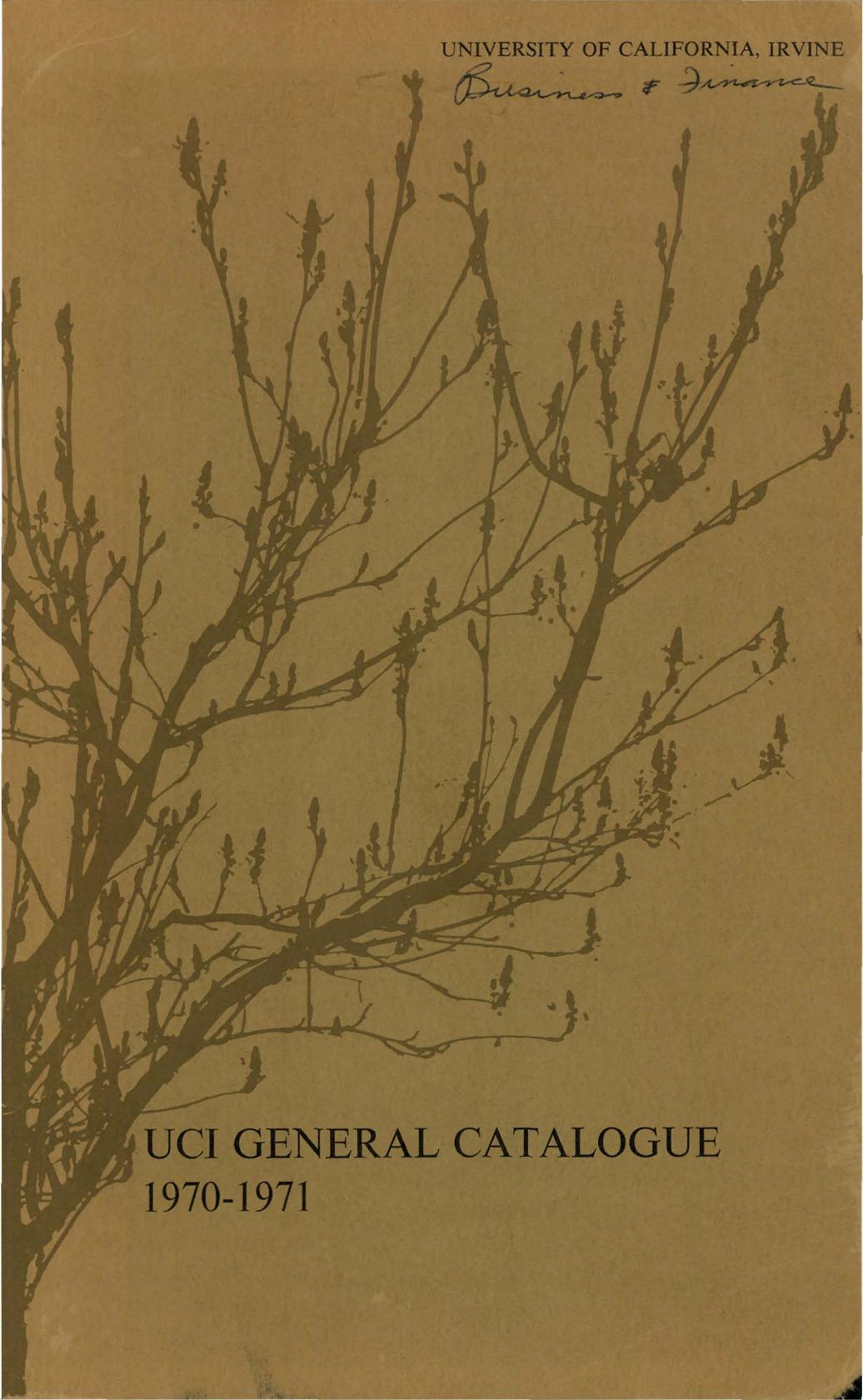


UNIVERSITY OF CALIFORNIA, IRVINE

Business & Finance



UCI GENERAL CATALOGUE
1970-1971

PUBLISHED QUARTERLY AT
THE UNIVERSITY OF CALIFORNIA, IRVINE
IRVINE, CALIFORNIA 92664

Volume 4 • July 1970 • Number 1

A series of administrative publications of the
University of California, Irvine.

All announcements herein are subject to revision.

Second-class postage paid at Newport Beach, California.
Form 3579 should be sent to the University of California, Irvine,
Irvine, California, 92664.

Price \$1.00

UC IRVINE - 1970-1971

This issue of the UCI General Catalogue is dedicated to the memory of Edward A. Steinhaus (1914-1969)—first professor appointed at UCI, first dean of the School of Biological Sciences, academic statesman, humanitarian, ecologist and friend. His humor and humility underscored the tremendous contribution he made to the betterment of the world he loved. Known as the “father of modern invertebrate pathology,” he was among the first to apply pathogens for the control of insect pests, an effective alternative to hazardous chemical pesticides.

Appropriate to the spirit of this dedication, we have chosen a pictorial theme of the San Joaquin Fresh Water Marsh, adjacent to the UCI campus. Dr. Steinhaus and many others campaigned long to preserve these dwindling marsh lands for wildlife and for use as a “living laboratory.” In December 1969 The Regents of the University authorized purchase of 200 acres of the San Joaquin Marsh, a significant step toward maintaining environmental balance in this area.

Daniel G. Aldrich, Jr.
Chancellor









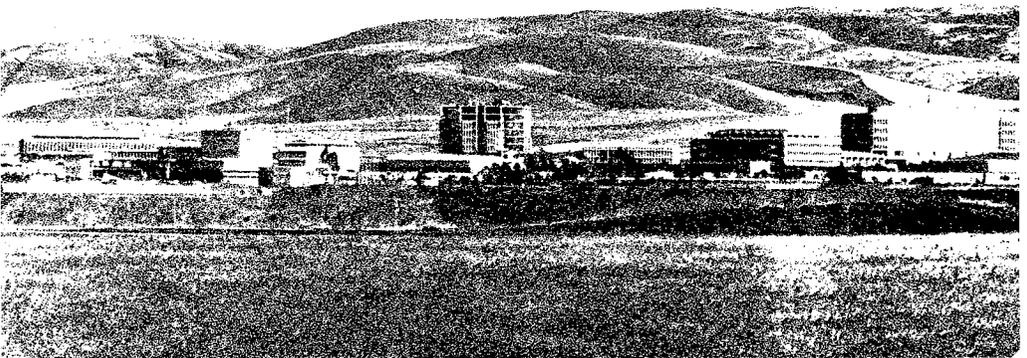




UC IRVINE - 1970-1971



UCI GENERAL CATALOGUE 1970-1971



UC IRVINE - 1970-1971

"The central mission of the University of California is learning. Learning encompasses transfer of knowledge, but not indoctrination; respect for the past, but not idolatry; high concern with academic excellence, but not to the exclusion of the whole person.

"We are committed to providing the most favorable environment for learning, not only in attractive campuses and modern facilities, but more importantly in preserving and encouraging the spirit of free inquiry and dedication to truth which have made the University of California a truly great University."

Charles J. Hitch
President of the University

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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ACADEMIC CALENDAR 1970-71

Fall Quarter 1970

Registration and Enrollment	Sept. 1-18
Orientation for New Students	Sept. 28 - Oct. 2
Late Registration and Enrollment	Sept. 28 - 30
Instruction Begins	Oct. 5
Last Day for Late Registration	Oct. 9
Last Day to Add a Course	Oct. 16
Last Day to Change Passed/Not Passed Option	Oct. 16
Last Day to Drop a Course	Nov. 13
Thanksgiving Holiday	Nov. 26-27
Instruction Ends	Dec. 12
Final Examinations	Dec. 14-19
Quarter Ends	Dec. 19
Christmas Holiday	Dec. 24-25
New Year's Holiday	Dec. 31 - Jan. 1

Winter Quarter 1971

Registration and Enrollment	Dec. 1-11
Late Registration and Enrollment	Jan. 4-6
Instruction Begins	Jan. 7
Last Day for Late Registration	Jan. 15
Last Day to Add a Course	Jan. 22
Last Day to Change Passed/Not Passed Option	Jan. 22
Washington's Birthday Holiday	Feb. 15
Last Day to Drop a Course	Feb. 19
Instruction Ends	March 13
Final Examinations	March 15-20
Quarter Ends	March 20
Spring Holiday	March 26

Spring Quarter 1971

Registration and Enrollment	March 1-12
Late Registration and Enrollment	March 29-31
Instruction Begins	April 1
Last Day for Late Registration	April 9
Last Day to Add a Course	April 16
Last Day to Change Passed/Not Passed Option	April 16
Last Day to Drop a Course	May 14
Memorial Day Holiday	May 31
Instruction Ends	June 5
Final Examinations	June 7-12
Commencement	June 12
Quarter Ends	June 15



THE UNIVERSITY

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 Alamos, New Mexico.

Located in San Francisco are the affiliated Hastings College of 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 is soon expected to surpass 100,000. Nearly 85 percent of all students 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 on its staff 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 organization and government of the University is entrusted under the State Constitution to a corporate body, The Regents of the University of California. The Board of Regents is composed of twenty-four members, sixteen appointed by the Governor of California for sixteen-year terms and eight who are members because of the offices they hold. The Regents have "full powers of organization and government, subject only to such legislative controls as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds."

The President of the University is the executive head of the entire University. He is appointed by The Regents and is directly responsible to them.

Each of the nine campuses of the University has a Chancellor as its chief administrative officer. The Chancellor is responsible for the organization and operation of the campus, including academic, student, and business affairs. The President has delegated substantial additional authority to the Chancellors including appointment of faculty (subject to the approval of The Regents), department chairmen, directors of local instructional or organized research units, and other personnel.

The Academic Senate, consisting of the faculty and certain administrative officers, participates in the administration of academic matters. Subject to the approval of The Board of Regents, the Senate determines conditions for admission of students and for granting certificates and degrees. It authorizes and supervises all courses on instruction in the academic and professional schools and colleges, and exercises general supervision of the discipline of students.

Over the years the University of California has distinguished itself among the nation's educational institutions, and the friendly rivalry among the campuses does not diminish the spirit of cooperation and sense of common purpose in furthering the University's academic and cultural stature.

Relations with Schools

The University Office of Relations with Schools serves in 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, it interprets to the University current developments on other educational levels whose impact is felt through entering students. Schools or organizations seeking other 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 will be 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 1969, 5,049 students were enrolled: 3,661 undergraduates, 813 graduates, and 575 students, interns, and residents in the UCI-California College of Medicine. Enrollment is projected at a steady annual increase until a total of 27,500 is reached about 1990.

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.

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, barber shop, malt shop, beer garden, cleaners, market, travel bureau, post office, book store, clothing stores, 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 retain permanently 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 almost complete, and many facilities extending from it have been completed: The Fine Arts complex, housing units, the first part of the Student Health Services building, and others. 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 towns, 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.

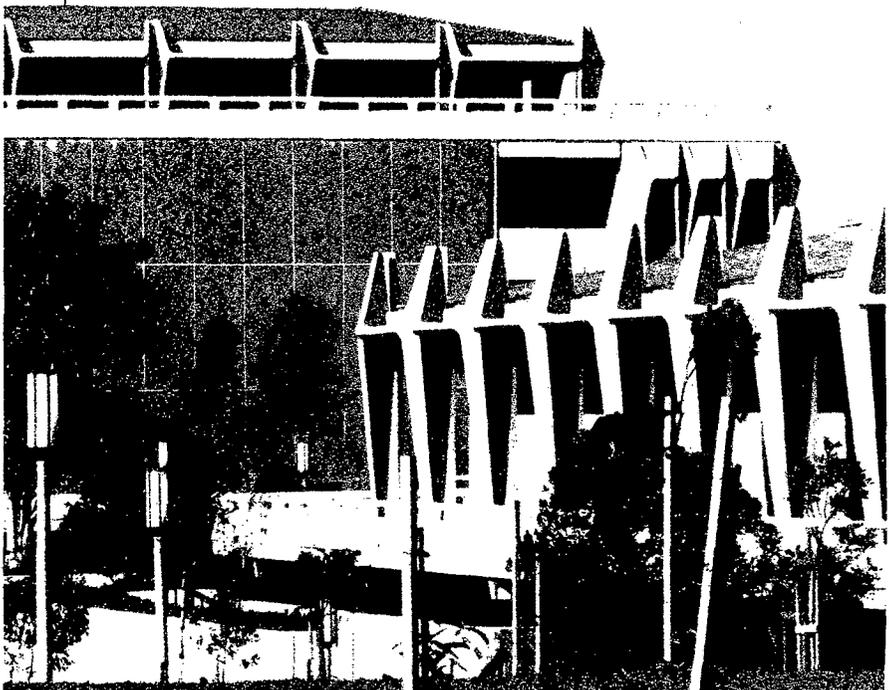
For further information about the Irvine campus contact the University Relations Office, which is responsible for public information, publications, University and community relations, gifts and endowments, alumni relations, public ceremonies, campus tours, the Speakers Bureau, and liaison with support 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, and the Associated Alumni of the UCI-California College of Medicine.

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, 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 nine sports: baseball, basketball, crew, golf, gymnastics, sailing, swimming, tennis, and water polo. The water polo team has been ranked in the top ten nationally the past five years; the swimming team won the National College Division Championship in 1969, having placed second and third in previous years; the basketball team played in two NCAA Western Regional Playoffs; and the tennis team won the All-University Tennis Tournament in 1970. Irvine's crew and sailing teams consistently rank high in intercollegiate competition on the West Coast. All-American honors have been awarded to 25 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 350,000 volumes and a current subscription list of more than 6,000 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.

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

The library copying service, supplemented by student owned, 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 terminals connected to the campus Interactive Computing Facility.

A medical collection of about 40,000 volumes is available in Medical Surge Building II.

Two branch libraries, designed to serve the physical and biological sciences with collections of about 10,000 volumes each, 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. Reference collections are also located in the Museum of Systematic Biology and the Center for Pathobiology in Steinhaus Hall (biological sciences).

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 dedicated to the advancement of the understanding of disease from the standpoint of the basic sciences, especially the biological sciences. It serves as an informational and research unit, as well as a center for advanced study of all manner of disease in all types of animal and plant life. The Center aspires to bring together "critical masses" of resources, specimen materials, literature, AV/TV materials, and computer and information retrieval facilities to enable the enhancement of teaching, research, and professional and public service in the biology of disease. It is situated in the School of Biological Sciences, with departmental affiliations and interdisciplinary opportunities fully available.

Computer Facility

The Computer Facility provides computational and other information processing services for instructional and research purposes to members of the University community. The computer system is designed for easy access by faculty and students through use of remote on-line stations and appropriate programming languages. Computer Facility staff provide consulting service to users on difficult programming problems and offer short, non-credit courses on the available services.

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 of 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 projects at PPRO are exploring: (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

THE ACADEMIC PLAN

The university environment is not so far removed from the "real 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.

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.S., Ph.D.
American and Comparative Culture	Ph.D.
Art	B.A., M.F.A.

Biological Sciences	B.S.
Developmental and Cell Biology	M.S., Ph.D.
Molecular Biology and Biochemistry	M.S., Ph.D.
Population and Environmental Biology	M.S., Ph.D.
Psychobiology	M.S., Ph.D.
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., M.F.A.
Drama	B.A., M.F.A.
Education (credential programs)	Secondary-Elementary
Engineering	B.S., M.S., Ph.D.
English	B.A., M.A., M.F.A., Ph.D.
Fine Arts (interdisciplinary)	B.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.A., Ph.D.
Latin	B.A.
Linguistics	B.A.
Mathematics	B.A., M.A., Ph.D.
Medicine	M.D.
Music	B.A., M.F.A.
Philosophy	B.A., M.A., Ph.D.
Physics	B.A., M.A., Ph.D.
Political Science	Ph.D.
Psychology	Ph.D.
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 the catalogue.

REQUIREMENTS FOR THE 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. Passage of an examination in the subject,* *or*
 - b. Presentation of a certificate of completion of the requirement at another California institution.

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

*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.

**The breadth requirement does not apply to students majoring in the School of Engineering.

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.

Proficiency in English and Foreign Languages

Beyond the general English requirement ("Subject A", described on p. 22), 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.

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. 22).

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. 51).

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 100A-B-C-D-E-F (Core Curriculum); Physics 3A-B-C or 5A-B-C; Mathematics 2A-B-C or 5A-B-C; Chemistry 1A-B-C; Chemistry 51A-B-C; minimum of three Satellite courses (see p. 85). (There are no departmental requirements as such in the School of Biological Sciences.)

School of Fine Arts

No school requirements

Departmental Requirements

Art — Studio Major: One year's work in visual fundamentals (30A-B-C); one year's survey in history of art (40A-B-C); two courses in contemporary art to be taken the first year 109N, 129); six upper-division studio courses with at least three in 190 (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 Passed/Not Passed).

Art History Major: One year's work in visual fundamentals (30A-B-C); one year's survey in history of art (40A-B-C); eight 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), and Contemporary (108, 108N, 109, 109N, 110N, 128, 129); 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 Passed/Not Passed).

Dance — 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 year's work in theory (20A-B-C); one year's work in music for dancers (120A-B-C); one course in dance notation (65A); one course in history of dance (110A, B, or 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 year's studio work in jazz (50A-B-C); one year's work in theory (20A-B-C); one year's work in music for dancers (120A-B-C); three courses in history of dance (110A-B-C); three courses in dance notation (65A-B-C); one course in dance criticism (125); three courses in choreography (155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Drama — One year's survey in the development of dramatic literature (40A-B-C); one year in acting (30A-B-C); one year in design (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, 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 Passed/Not Passed); participation (acting or technical) in at least one major University Theatre production a year (60, 160, 196).

Music — (See p. 111 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 year's work in history and literature of music (40A-B-C); one year's work in counterpoint (135A-B-C); one year's 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 Passed/Not Passed); 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

The School makes no specific course requirements but does require that each student meet with his advisor prior to each quarterly enrollment.

Departmental Requirements

Classics — Four separate majors: Greek, Latin, Classics (the latter a combined Greek and Latin major with emphasis in either of the two languages), and Classical Civilization.

Greek. Greek 2A-B-C; Greek 10; six courses from Greek 100-199; Classics 152.

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 of Latin (or Greek) 100-199.

Classical Civilization. Latin (or Greek) 1A-B-C; Classics 141, 151, 152, 153, 162, 163; Philosophy 20A, 121; Art 101, 102; History 110A (or 112); History 110B (or 114).

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 12 literature or allied courses in addition, of which ten must be upper division: normally these will include CL 100A-B, 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 100A twice; CL 100B once; CL 101; E 102 or CL 102 twice; three courses above 102; 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 seven upper-division courses of which at least five must be in literature.

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

History — History 29A-B-C, or, for upper-division transfer students, a year-long survey in history; seven additional upper-division courses, including one in historiography; History 199A-B (Senior Seminar).

Linguistics — Linguistics 50, 101, 102, 103; four additional upper-division courses in linguistics; three courses beyond 2C in a single foreign language; three courses of a non-Indo-European language or three courses of Greek or Latin.

Philosophy — Philosophy 5 or 15 or 50; Philosophy 20A-B-C, 100, 110; four additional courses from Philosophy 101-199.

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 Spanish and Spanish-American literature with a minimum of three in the latter.

(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).

School of Physical Sciences

Ability 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; reading competence in French, German, Russian, or Japanese. (See p. 165 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.

Physics — Physics 5A-B-C-D-E and eight courses numbered between 110 and 190, including at least 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.

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,

*These requirements are under study and may be changed in the future. Students majoring in Mathematics before 1970-71 should consult their advisors or the Department of Mathematics for information concerning requirements applicable to them.

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 22, does not apply.

Electrical Engineering — Engineering 100A-B-C, 101A-B-C, 105A-B-C; six additional Engineering courses; six mathematics courses; eight courses in physics and chemistry or biology; Information and Computer Science 1; six courses from one of the following schools: Humanities, Fine Arts, or Social Sciences; three courses from another of the three previously listed schools.

Civil and Environmental Engineering — Engineering 100A-B-C, 101A-B-C, 105A-B-C; six additional Engineering courses; nine mathematics courses; eight courses in physics and chemistry; three biology courses; Information and Computer Science 1; six courses from one of the following schools: Humanities, Fine Arts, or Social Sciences.

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. 222); and (5) completing Comparative Culture I, a prerequisite for entry into the major, by the end of his sophomore year.

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, and Chicano Culture. He will take, in his area of concentration, at least eight quarter courses. He will observe the special requirements and required courses listed on page 222. The student will also take, for comparative, multicultural purposes, at least four courses in each of two other areas; possible as comparative areas include those listed above as well as Latin-American Culture, Comparative Literature, Classical Civilization, and Russian Culture.

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.

Social Ecology

Social Ecology 100A-B-C during sophomore year; field study during each quarter of junior and senior years (one course credit per quarter).

*A one-year course covering the topics in the textbook Kemeny, Mirkil, Snell, and Thompson, *Finite Mathematical Structures*, may be substituted for Mathematics 3A-B-C.

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 would like to major in one of several subjects. Almost all students have at least a negative knowledge about this; they 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 preconception 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 Passed/Not Passed basis will often be helpful in this pursuit.

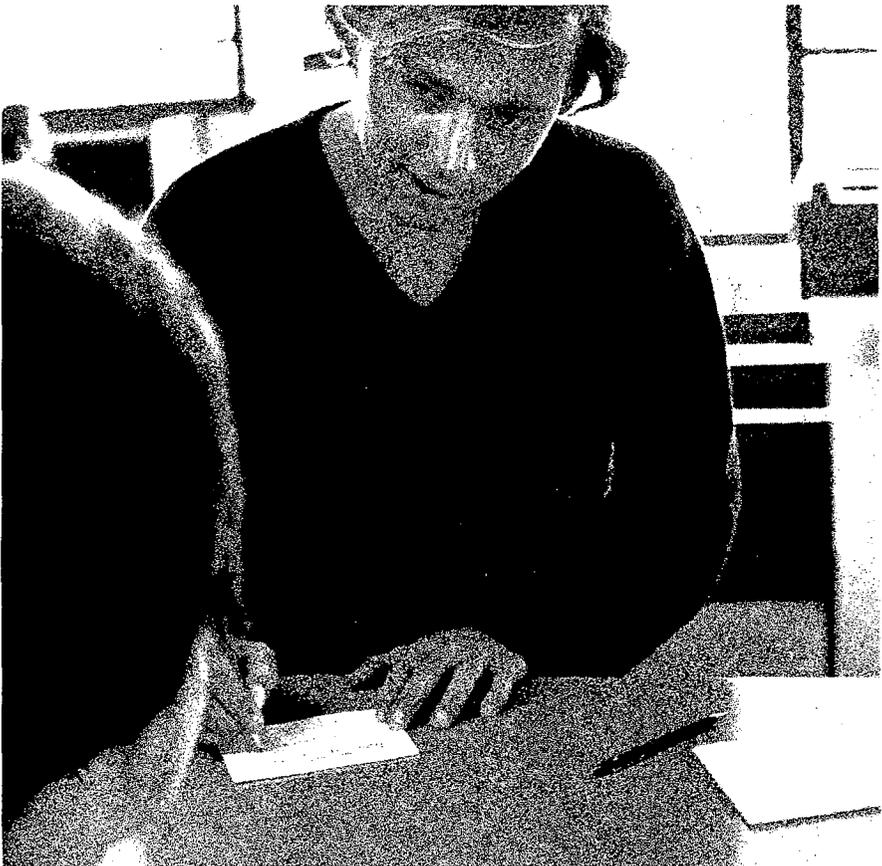
Perhaps the most important advice to be given about choosing a major is preventative: the student should not plan freshman or sophomore programs which will prevent his entering or taking advanced courses in a field he thinks he may want as a major. For example, he should check such major (or school) 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 possibilities 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

Each student is assigned a faculty advisor and an academic dean. A student who expresses a preference is assigned an advisor in a particular department or school, and his dean is the dean of that school. 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. He should always see his advisor prior to registration (preferably well in advance of it) unless he is absolutely sure of what courses he wants and of the requirements he will need to fulfill. 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 take a course required for graduation or for a major which the student may later wish to elect.



However, 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 this campus.

Preliminary advising takes place for new students during Orientation Week in the fall. 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 if the advisor is assigned to other duties. Frequently a new advisor is assigned after the student declares a major, either because the field of interest requires it or because the department 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 requirement, or having other 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.

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. 63).

A student considering any of these changes would, of course, do well to consult his advisor.

Freshmen and sophomores intending to enter the School of Engineering will be assigned advisors from the faculty of that school, but until admitted to it they will remain, in respect to academic matters, subject to the jurisdiction of the dean of a school in which they are taking lower-division courses.



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 in the School of Biological Sciences or by majoring in other of the schools. 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 pre dental 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 a career in business or public administration should choose for their electives those prerequisite courses required for the program of study in the Graduate School of Administration (for these requirements, see p. 254). The School of Social Sciences also offers, in conjunction with the Graduate School of Administration, a special five-year program for select students leading to both a Bachelor's Degree in the social sciences 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

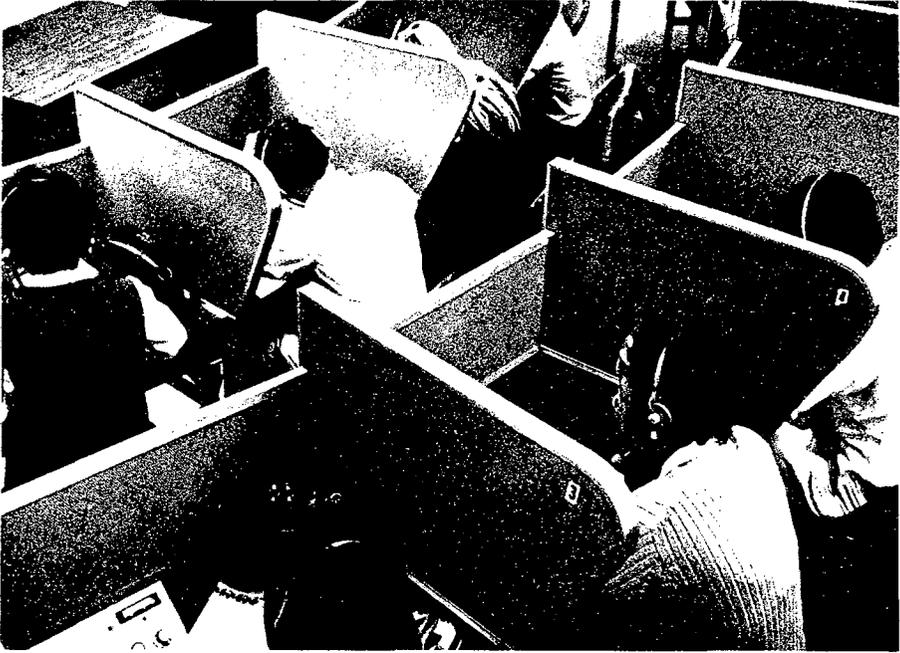
college teaching. All credentials require at least a full year of work beyond the Bachelor's Degree.

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 and 172. 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 Education/Education of Teachers, page 259.





Supplementary Educational Programs

Education Abroad Program

The Education Abroad Program, now entering its tenth 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. Professor Seymour Menton of the Department of Spanish and Portuguese is the Irvine Campus Coordinator.

Study centers have been established in France, Germany, Ghana, Hong Kong, Israel, Italy, Japan, Kenya, Lebanon, Norway, Spain, Sweden, and the United Kingdom and Ireland. Special programs for students preparing for a career in teaching Spanish and French in secondary schools have been established in Mexico City and in Paris.

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 programs in Mexico and in Paris, France, are for seniors and graduate students planning to become teachers of

Spanish and French, and are held in two sessions during the fall and winter quarters or the spring and summer.

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 1971-72 should be in by January 15, 1971, with the exception of applications for Paris, France, Mexico, and the United Kingdom, which are due by November 13, 1970.

For further information write to the Education Abroad Program, 2108 South Hall, University of California, Santa Barbara, or contact the Department of Spanish and Portuguese, 260 Humanities-Social Sciences Building, University of California, Irvine.

Summer Session

An eight-week Summer Session will be held on the Irvine campus from June 21 to August 13, 1971. 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 51 in the Admissions and Enrollment section. Suggestions regarding program planning can be found there along with specific information on transfer of credits.



UC IRVINE - 1970-1971

STUDENT AFFAIRS

STUDENT AFFAIRS

The Vice Chancellor for Student Affairs has responsibility for the full range of non-instructional activities, including, specifically: Office of the Dean of Students, Innovation in Student Life, Intercollegiate Athletics, Student Health Services, Student Counseling, Student Conduct and Discipline, Admissions and Registrar, and New Program Development in Student Affairs.

These departments are intended not to restrict, control, or discipline the student, but to serve him. Unlike the offices of student affairs on many campuses, where the administrative officer or the dean of students acts to implement institutional regulations, the offices for student affairs at Irvine are primarily service centers and act to determine, assess, and implement student needs. Our 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.

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.

Special Student Services

Three areas of difficulty are handled in the Special 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 will find this office essential. The Special Services office is in the Library-Administration Building, Room 1433.

Physically handicapped students at UCI can receive assistance with registration and enrollment procedures as well as help in getting to and from classes. Students or their counselors should contact the Assistant to the Dean of Students for assistance in any area of need. This office is in the Library-Administration Building, Room 1415, phone 833-7245.

UCI students who are not U. S. citizens will find the Foreign Student Advisor 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 Special 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.

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 and a stipend 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. 42.)

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 they cease full-time study.

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 Part-Time and Summer Student Placement 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 Placement

Students at all levels, freshman through graduate student, are invited to seek assistance in career planning and job search at the Career Placement Office, Library-Administration Building, Room 194. A career counselor will be glad to assist you in seeking out and determining goal directions.

Graduating seniors and graduate students are offered the opportunity to interview on campus with representatives from employing organizations. Students and alumni seeking immediate employment may register with the Career Placement Office to be referred directly to employers who have current career opportunities.

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, occupations, and size. A new index for companies in the Western region is now available for those students who prefer local employment. Students are encouraged to obtain this literature and, if they wish, discuss it with the career counselor.

Information and materials covering requirements and admissions to professional and graduate schools are available, and students are encouraged to utilize this service.

Students should begin working toward achieving a career instead of just a job 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.

Educational Placement

The Educational Placement Office refers students, graduates, and former students to teaching and administrative positions in universities, colleges, high schools, and elementary schools, and for educational research. Candidates are registered and information is assembled into personal files concerning background, training, and professional experience, in order to match candidates with available positions.

An Educational Placement advisor counsels candidates, communicates with employers, arranges interviews, and recommends qualified candidates to employers. The University reserves the right to recommend only those persons who are considered to be fully qualified. In every instance the aim is to recommend the best available persons, considering candidates already employed as well as those who may be out of employment.

Candidates are urged to inform the Educational Placement Office of the results of their candidacy and of their desires for future promotion or change of occupation. The Educational Placement Office is in the Library-Administration Building, Room 1441.

Part-Time and Summer Student Placement

UCI alumni, students, and their spouses who wish assistance in seeking part-time or full-time employment during the academic year and summer vacations may register with the Placement Center, Library-Administration Building, Room 1441. Job listings are provided to assist each applicant in finding suitable employment opportunities both on-campus and in the general area. The jobs listed by employers throughout the year range from clerical, maintenance, and generally unskilled work to highly technical computer, laboratory, and specialized employment. In addition to general job listings, this placement office also offers automatic child care, home typing, and tutoring referral systems. Information on federal and state employment is available as well as a library of summer work catalogues and brochures.

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 as well as supervision of Student Stores, Student Centers, Vending, and accommodations for conferences and special events.

The University maintains on-campus residences for 1200 undergraduate single 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 students' organizations and activities. The Activities Office staff acts as advisors to student government, as well as to students who are interested in existing campus programs or in initiating new projects.

The University encourages participation in those activities which interest the student in the belief that such participation will supplement the educational experiences gained in the classroom. There are a variety of student clubs devoted to politics, special interests, service, and social activities. Students interested in new dimensions of campus life are encouraged to seek assistance in the Activities Office.

Educational Opportunities Program

The difficulties students from minority and/or low-income backgrounds encounter in seeking a college education may range from inadequate public school experience to a lack of money. The Educational Opportunities Program (EOP) is designed to assist students in overcoming these and other difficulties. EOP assistance is available to entering freshmen, transfers from junior colleges, and graduate students.

Eligibility — Students with minority group and/or low-income backgrounds are encouraged to apply. Particularly encouraged to apply are those minority group, low-income students 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 EOP 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 and/or his family is unable to meet these expenses. Financial aid is comprised of a combination or “package” of grant, loan, and summer and/or part-time employment based on the individual need of the student applicant. Individual financial aid counseling is provided each student through the Financial Aids Office (see above).

Academic Support — To help insure the academic success of EOP students, tutoring and advising are available at the University through the EOP 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 EOP office or 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:

Director
Educational Opportunities Program
University of California, Irvine
Irvine, California 92664
Phone: (714) 833-5410 or 833-5908

Recreation Sports

A variety of physical activities for students at UCI is provided by this program. Men's and women's intramural sports, as well as coed intramurals, physical recreation, and sports clubs, are regular activities. More information can be obtained in the Recreation Sports Office, Room 1114, Crawford Hall.

Central Campus Calendar

All events that take place on the campus are cleared through this office. All campus and non-campus organizations should contact this office for assistance in scheduling facilities. A variety of support services are available, according to the nature of the event, to help make it successful. The Calendar Office is in the Library-Administration Building, Room 1433, phone 833-6888.



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 endeavors 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 Room 107, Gateway Commons.

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 as well as a major medical plan.

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 preventative 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.

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 proper 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.



ADMISSIONS AND ENROLLMENT

UNDERGRADUATE ADMISSIONS

Undergraduate admissions requirements are uniform on all campuses of the University. The eligible student will be admitted to the campus of his first choice in conformance with enrollment quotas established for that campus. Applications will be processed on only one campus of the University and duplicate applications should not be filed.

Applicants who submit an application after the campus quota has been filled will be referred to their second-choice campus. Should enrollment quotas limit the acceptance of applications on the second campus the application may be forwarded to the third- or fourth-choice campus.

Applicants should give careful consideration to the selection of the campus and file as early in the filing period as possible.

Undergraduate students are classified as either Regular or Limited. Regular students are candidates for an undergraduate degree and are expected to carry a minimum of three courses each quarter. 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 degree goal are encouraged to enroll in courses through University Extension.

Application

Application packets, including all the necessary forms and instructions, may be obtained from the Office of Admissions.

Filing Dates

<i>Quarter</i>	<i>Opening Date</i>	<i>Closing Date</i>
Fall	To be announced	Variable*
Winter	May 1	November 1
Spring	August 1	February 1

Application Fee

A nonrefundable fee of \$10.00 must accompany each application. Checks or money orders should be made payable to The Regents of the University of California.

Transcripts of Record

Each applicant is responsible for requesting the graduating high school and each college attended to send official transcripts of record directly to the Office of Admissions. Those applying as entering freshmen should ask the high school to submit preliminary transcripts showing their complete record through the sixth semester and listing courses in progress. In every case, a final transcript including a statement of graduation will be necessary.

*The closing date will vary from campus to campus as individual campus and college quotas are reached.

Applicants for advanced standing should submit preliminary transcripts of all college or university work attempted to date, in addition to the high school record. All preliminary transcripts should include a statement of the work in progress. Final transcripts should show evidence of good standing or honorable dismissal.

Notice of Admission or Deferral

The length of time required for evaluation of an application and its accompanying transcripts of record varies. (Notices of Admission to eligible fall applicants will be released beginning in mid-April.) Frequently, eligibility cannot be determined until the final term's work is completed. In such cases, the applicant may expect to receive a preliminary statement indicating the status of his application.

The Statement of Intention to Register (SIR), issued with the Notice of Admission, should be returned promptly. The \$50.00 advance deposit on the registration fee is nonrefundable and will be applied to the full registration fee when the student registers. The Notice of Deferral is accompanied by the Statement of Deficiencies which lists the reasons for the deferral.

Reapplication

An applicant who is not admitted, or who does not enroll for the quarter to which he is admitted, must reapply if he seeks admission to a subsequent quarter. Transcripts of records on file will be retained for six quarters.



Admission to Freshman Standing

In addition to the high school subjects required for admission to the University, certain preparatory subjects are recommended to give the student an adequate background for his chosen field of study. Details of these recommendations will be found in the bulletin, *Prerequisites and Recommended Subjects*, which is customarily in the hands of high school and junior college counselors. A copy may be obtained from the Office of Relations with Schools, or from the University Dean of Educational Relations, University Hall, University of California, Berkeley, California 94720. Applicants not eligible for admission to the University are advised to attend one of the California junior colleges to take courses applicable to the requirements of the school in which they wish to enroll.

Requirements for California Residents

The freshman applicant must: (1) graduate from a California high school which has an acceptable course list on file with the Director of Admissions of the University; (2) complete satisfactorily the "a to f" sequence of subject requirements, plus elective units to total 15 entrance units (see below); (3) earn a grade point average of at least 3.0 (B) on the courses required to satisfy the "a to f" sequence; (4) submit the following test scores from the College Entrance Examination Board:*

- a. Scholastic Aptitude Test — Verbal and Mathematics
- b. Achievement Tests — English Composition, Social Science/Foreign Languages, and Science/Math

Subject Requirements (the "a to f" sequence)

- a. History, 1 unit — 1 unit of United States History or 1/2 unit of United States History and 1/2 unit of American Government.
- b. English, 3 units — 3 units of English composition, literature, and oral expression.
- c. Mathematics, 2 units — 2 units of subjects such as elementary algebra, geometry, trigonometry, calculus, elementary functions, matrix algebra, probability, statistics, or courses combining these topics. Arithmetic and such non-academic subjects as shop mathematics and business mathematics are excluded.
- d. Laboratory Science, 1 unit.
- e. Foreign Language, 2 units — Must be in one language. Any foreign language with a written literature is acceptable.
- f. Advanced course, 1 (or 2) units(s) — Chosen from the following: Mathematics, a total of 1 unit of second-year algebra, solid geometry, trigonometry, or other certified advanced courses; Foreign Language, either 1 additional unit in the same foreign language offered under "e" or 2 units of another foreign language; Science, 1 unit of either chemistry or physics in addition to the science offered under "d."

*The 1970-71 CEEB Scholastic Aptitude and Achievement tests will be given on the following dates: November 7, December 5, 1970; January 9, March 6, April 17, May 1, July 10, 1971. Arrangements to take the tests should be made with Educational Testing Service, P.O. Box 1025, Berkeley, California 94710; or P.O. Box 592, Princeton, N.J. 08540.

Electives

Elective units to complete the minimum of 15 standard entrance units are also required. Additional information regarding the admission requirements will be found in the Undergraduate Admissions Circular, available from the Office of Admissions.

Admission by Examination

The freshman applicant who is not eligible on the basis of his high school record and who has completed no college or university work may qualify for admission by examination. Acceptable scores on the same CEEB tests required of all freshmen may qualify the candidate for admission. The combined (verbal and math) SAT score must be 1100; each Achievement test score must be at least 500; the combined (three) total of the Achievement test scores must be 1650.

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 (see above); (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

Admission by Examination

The non-California resident freshman applicant who is not eligible on the basis of his high school record and has completed no college or university work may also qualify for Admission by Examination. The combined SAT score must be 1100; each Achievement test score must be at least 500; and the combined Achievement test scores must total 1725.

CEEB Advanced Placement Examinations

Advanced standing credit of ten quarter units is granted for each Advanced Placement Examination of the College Entrance Examination Board completed during the eleventh or twelfth grade and on which the score is 3, 4, or 5. An exception is the examination in Latin, for which five units are granted.

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 to Advanced Standing

Requirements for California Residents

The advanced standing applicant who would have been eligible for freshman admission is eligible for admission to advanced standing upon presentation of a transcript of record indicating an overall grade point average of 2.0 in all college or university work attempted.

The advanced standing applicant who would not have been eligible for admission as a freshman because of subject deficiencies may establish his eligibility by the completion of course work in the deficient area(s) and the maintenance of a grade point average of 2.0 or better. The advanced standing applicant who would not have been eligible for admission as a freshman because of scholarship deficiencies may establish his eligibility by completion of a minimum of 84 quarter hours of transferable course work at an accredited college or university with an overall grade point average of 2.4 or better. The advanced standing applicant who would not have been eligible for admission as a freshman because of both subject and scholarship deficiencies may establish his eligibility by completing a minimum of 84 quarter hours of transferable course work at an accredited college or university with an overall grade point average of 2.4 or better, and the removal of the deficiencies in subject requirements. High school subject deficiencies can be waived in an amount not exceeding two high school units.

Requirements for Non-California Residents

In addition to the regular advanced standing requirements cited above, a nonresident applicant for admission to advanced standing must have maintained a grade point average of 2.8 or better in college courses offered for transfer credit. The nonresident applicant must have maintained a high school grade point average of 3.4 or better, with no subject deficiencies, in order to qualify with less than 84 hours of credit.

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.

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.

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.

University Requirements

See page 22 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 transfer students 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 frequently 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. 23.) 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. 23.)

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.

Admission to Limited Status

A student with an undergraduate degree who seeks to be admitted to the University for the purpose of completing additional undergraduate course work in order to qualify for admission to a graduate or professional program must apply through the Graduate Division. His admission must be recommended by a graduate advisor and is subject to the final approval of the Dean of the Graduate Division. (The term Limited applies only to his undergraduate status, not to the course load he will be expected to carry.)

Admission for a Second Bachelor's Degree

Admission as a candidate for a second Bachelor's Degree is normally discouraged. However, the University recognizes that complete changes in objective may occur which necessitate a second undergraduate degree. An applicant must be fully eligible for admission to the University, and his record must indicate strong probability of academic success in the new area. Admission is subject to the approval of the dean of the school in which the second degree will be earned and the Admissions Officer.

Admission to the University-High School Enrichment Program

The opportunity to enroll in a University course concurrent with the senior year of high school is afforded to certain recommended students. Enrollment of students in UHSEP is limited. High school students wishing more information about the program should consult their high school counselor.

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.

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.

Foreign Student Advisor

The University maintains an Office of Special Services to assist foreign students with problems of a non-academic nature. Foreign students are encouraged to contact that office for assistance should the need arise.

Additional Policies Relating to Admissions

Rules Governing Residence

Students who have not been bona fide 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 \$400 per quarter. (Government Code Section 244, Education Code Section 23055, and 23057 and Standing Orders of The Regents.) Legal residence is the combination of physical presence and the intention of making the state one's permanent home. New and readmitted students are required to complete a Statement of Legal Residence, either prior to or at the time of registration. Their status is determined by the Attorney in Residence Matters, 590 University Hall, University of California, Berkeley 94720, or by his deputy in the Registrar's Office. All correspondence concerning residence should be addressed to that official as he has the sole authority to determine residence classification.

A provisional classification made at the time of admission or readmission is subject to review and decision of the attorney.

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) veterans who were not California residents at the time of entry into the Armed Forces; (3) alien students who must first qualify for permanent residence status according to the applicable laws of the United States. Exemption from payment of the tuition fee may be granted to the unmarried minor whose 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 the minor registers.

Those classified incorrectly as residents are subject to reclassification as nonresidents. If incorrect classification resulted 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 under any circumstances.

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.* 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.

*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.

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 1970, November 1 for winter quarter 1971, and January 1 for spring quarter 1971. Applicants interested in financial support should apply not later than February 1, 1971 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 \$10.00 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 rejection 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 251.

Admission to UCI-California College of Medicine

All inquiries should be addressed to:

UCI-California College of Medicine
Office of Admissions
Irvine, California 92664
(714) 833-5389

Each application for admission, whether for first year or advanced standing, must be filed with the Admissions Office of the College of Medicine.

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 in full the requirements specified below:

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. 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 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. Duplication of medical curriculum subjects is not advised (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 question 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 members 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 Director of Admissions. An interview does not guarantee admission.

Western Interstate Commission for Higher Education

UCI-California 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. State eligibility requirements vary, and the number of students accepted from each state depends on appropriations by the state legislature. For addresses of certifying officers, write to the Western Interstate Commission for Higher Education, University East Campus, Boulder, Colorado 80304.

Procedures for Admission

The application must be submitted by November 30 of the year preceding that for which entrance is desired. Candidates for admission should file with the Admissions Office of the College the following:

1. A completed application.
2. Two glossy, unmounted photographs, exactly 2" x 2", taken within 60 days preceding the date of the application.
3. The candidate is responsible for having the scores of the Medical College Admissions Test sent to the Admissions Office of the College.
4. Personal Information Form.
5. Course list.
6. An evaluation fee of \$10.00, which is not refundable.

The applicant will be responsible for having the following sent to the Admissions Office:

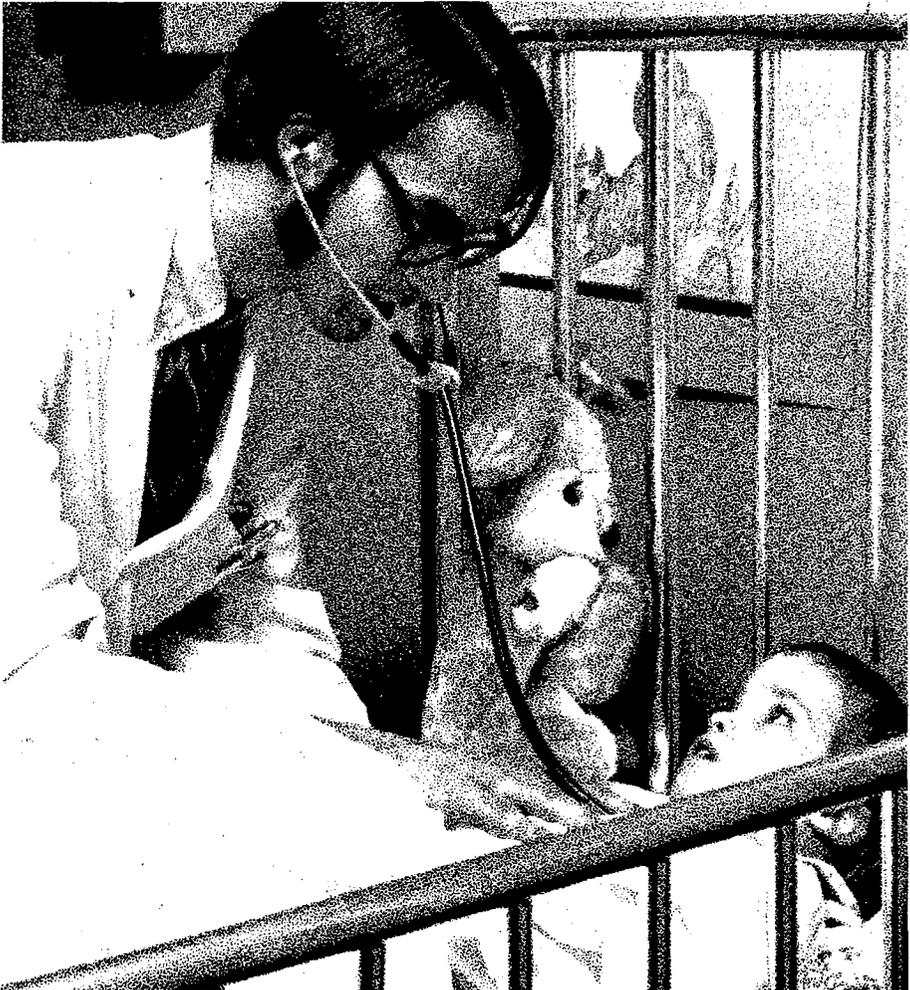
1. A copy of official transcript(s) of all college work. Transcripts must be sent by the school, *not* by the student. If the applicant is not expecting to receive a degree prior to entrance, he must also have his high school send a transcript.
2. A report of a physical examination.
3. A report from his college's premedical committee, or from two college instructors, preferably in science subjects.

No application for admission will be accepted which does not clearly indicate that all the required subjects will be 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, by action of the Admissions Committee and the Dean, granted 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 this Committee. Those students selected to enter the program must continue to demonstrate, throughout the course, 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.*
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 one or more places in other schools without adequate explanation. These rules should recognize the problems of the student who has multiple offers, and also of those applicants who have not yet been accepted.

*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.

ACADEMIC PROCEDURES AND 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 few 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.

For continuing students *only*, UCI offers an early registration-enrollment program, which reserves class spaces on a first-come, first-served basis by descending order of class level (e.g., graduates before seniors, seniors before juniors, etc.). Continuing students who cannot take advantage of the early registration-enrollment program may register and enroll at the same time as new students. During the summer before their first quarter at UCI, freshman students also have the opportunity of pre-enrolling in classes. At a certain date, all new students will receive a packet in the mail explaining the exact procedures to be followed in their enrollment program.

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.

During the first six weeks of the quarter, students may drop courses. To drop a course during the six-week period, 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 Registrar's 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 Passed/Not Passed 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 a dean'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 been 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.).

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 - Passed
- NP - Not Passed
- S - Satisfactory (graduate students only)
- U - Unsatisfactory (graduate students only)
- NR - Grade not reported by professor

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.

Passed/Not Passed

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

1. On the average, only one course per quarter may be taken with the Passed/Not Passed option. The student may not exceed 12 classes taken on a Passed/Not Passed 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 Passed/Not Passed grade recorded as "Passed." 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 Passed," 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 Passed/Not Passed 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 Passed/Not Passed 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 Passed/Not Passed option.
6. Graduate students may not use Passed/Not Passed 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.

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.

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 or not 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 Passed. 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 computing 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 Passed/Not Passed basis. A class in which a Not Passed grade was received can be taken again either for grade credit (A, B, C...) or on the Passed/Not Passed 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. 73 under "Fees and Expenses.") If necessary, a student may mail his notice of withdrawal 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."

Drop Out and Readmission (undergraduate students)

A student can drop out of school at the end of any quarter. If a student leaves the University voluntarily after the completion of any quarter and is in good standing at the time of his leave, he can be almost positive of readmission. To be readmitted to the University, the student must fill out an application for readmission at the Registrar's Office and pay a \$10.00 readmission fee. The student must file for readmission during the appropriate filing period before he plans to re-enter the University. He must do so in order to allow the Registrar time to get his records in order and secure him a registration packet.

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 if 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 \$10.00 is required for all Intercampus Transfer Applications filed with the Registrar's Office.

Intercampus Visitor (undergraduate students)

The Intercampus Visitor Program is a special program offered by the University of California. It allows the undergraduate student to visit other campuses in the University system and to take courses which he might not be able to take at his particular campus. A student may obtain an Application for Intercampus Visitor from the Registrar's Office, and he *must* file his application with his home campus registrar during the quarter prior to the quarter he plans to visit another campus. A student may be an intercampus visitor for only one quarter.

Intercampus Exchange (graduate students)

A graduate student is also 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.

Definitions of Terms Used

At first contact, the terms used in and around the Registrar's Office may confuse the incoming student and even the continuing student. The following definitions are terms commonly referred to in the catalogue and used daily in the Registrar's Office.

Drop-Add or Change in Course Enrollment Card — A card used when the student wants to drop, change, or add a class after classes have begun.

Enrollment — The actual placing of a student in classes.

Good Standing — An undergraduate student who has at least a 2.0 grade point average in work completed at the University of California is considered a student in good standing.

Grade Point Average — The grade point average of a student is an academic measuring stick. Each quarter, a student's grade point average is computed in the following manner. He receives a certain amount of points for each grade received. An "A" grade is worth 4 points, a "B" worth 3, a "C" worth 2, a "D" worth 1, and an "F" worth 0. The total amount of points accumulated will then be divided by the number of course credits taken for a letter grade, and an average will be reached. Passed, Not Passed, or Incomplete grades are not counted in the quarterly grade point average computation. Only grades received for courses completed at the University of California are computed.

Identification Card — Sometimes called a registration card, the student's identification card is given to him at the time he pays his fees or shortly after. He should keep his identification card with him at all times, for it is necessary to insure admittance to athletic events, to secure grades, and to identify himself as a student at UCI. If the identification card is lost, a \$3.00 replacement fee will be charged.

New Student — A student beginning his work at UCI is considered to be a new student. After one quarter's attendance at UCI, a student is considered to be a continuing student. The letters NU refer to new undergraduate, CU to continuing undergraduate, NG to new graduate, etc.

Passed/Not Passed — A system used to encourage students to experiment in fields outside of their major interests. Passed/Not Passed grades are not included in the student's grade point average.

Petition — A general petition is used by the student when he wishes to have a rule waived in view of certain personal, concrete circumstances. The student must obtain the petition from the dean's office, fill out his specific request, have the petition signed by the dean of his school, and leave it with his dean.

Registration — The process by which the student informs the University that he plans to begin attendance or continue attendance. Registration typically includes paying fees and enrolling in classes.

Transcript — A transcript is an official copy of the record of a student's work while at the University of California. Usually in order to receive acceptance to other institutions or to show a school record in order to gain job placement, the student will have to send a transcript of his records. A request for a transcript to be sent must be made through the Registrar's Office. Transcripts will be sent for the price of \$1.00 each.

Questions Commonly Asked

The Registrar's Office serves as a clearinghouse for all the functions listed on the previous pages. The people who work in the office continually find themselves in the position of answering the same questions asked by students. The questions are valid, and the answers greatly affect the lives of many students.

Questions on Passed/Not Passed

How do I get on Passed/Not Passed? A student can get on the Passed/Not Passed system during the first two weeks of the quarter, as long as he is in good academic standing. To do so, he must get a change of course enrollment card from the dean's office, have it signed by the instructor of the class, and return it to the dean.

How many Passed/Not Passed classes may I take per quarter? In any one quarter, a student may take as many Passed/Not Passed classes as he wishes, as long as the total number of Passed/Not Passed classes taken does not exceed the number of quarters he has been at UCI. For example, if a student has attended UCI for three quarters and has taken no classes on a Passed/Not Passed basis, he may take four classes on Passed/Not Passed option in his fourth quarter.

What about graduate students and Passed/Not Passed? A graduate student may take one Passed/Not Passed class per quarter. Such a class will not count toward his degree requirements.

How can a grade or class be changed to Passed/Not Passed after the quarter has begun? It can be changed at any time during the first two weeks of a quarter. After the first two weeks, a change must carry the dean's approval.

Can I make up a class in which I get a Not Passed? Yes. The student can make up to 16 units (four courses) of deficient grades.

If I need to get a Passed/Not Passed grade changed into a letter grade, how do I do it? A Passed/Not Passed grade can be changed to a letter grade only through a petition containing the approval of the dean of the student's school.

Incompletes

What exactly is an Incomplete? An Incomplete is decided upon by the student and the professor. An Incomplete may be given if a student shows capability of doing well in a class but cannot complete the work due to personal circumstances.

Is an Incomplete averaged into my grade point average? No. An Incomplete remains an Incomplete until the student makes up the grade or graduates. At graduation, "I" grades are changed to "F" grades.

How do I get an Incomplete changed into a letter grade? The instructor must file a change of grade form with the Registrar's Office.

How does an Incomplete grade affect my chances of getting into graduate school? Most graduate schools compute Incompletes as "F" grades, and the result could be disastrous. Therefore, Incompletes should be made up as soon as possible.

General Questions

How many units do I need to graduate? 180 quarter units (45 quarter courses).

How long may I drop out of school? For any amount of time desired. Readmission to one's home campus is fairly easy to obtain, providing you left in good academic standing.

What is the overall grade point average an undergraduate needs in order to graduate? A 2.0 is needed to graduate. Such an average will include all Incompletes computed as "F." Only grades received for work completed at the University of California will be computed.

What grade point average do I need to stay in school? A student will not be on probation or subject to dismissal if he has a 2.0 average. Only grades received for work completed at the University of California will be computed.

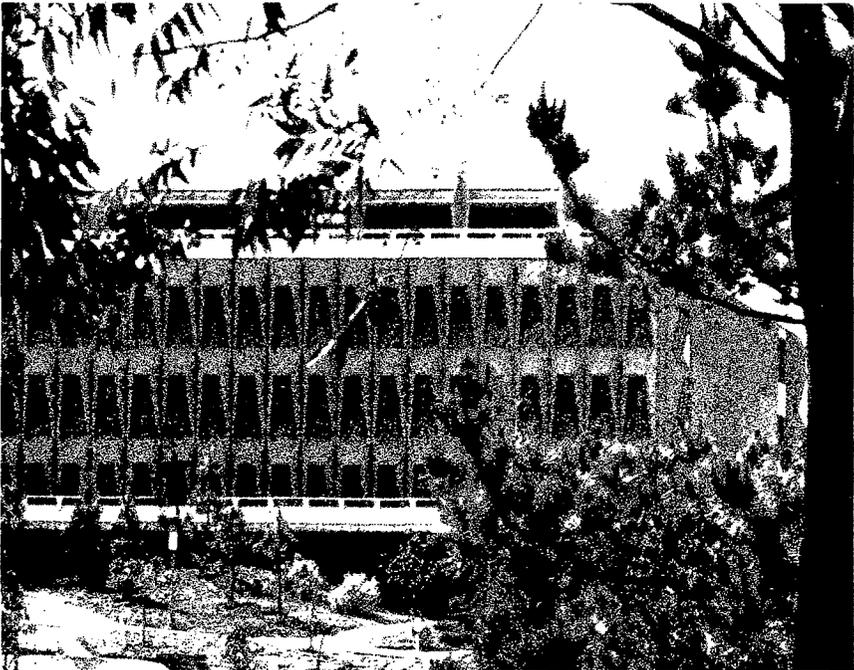
What grade point average do I need to transfer from one campus to another? At least a 2.0 and possibly higher.

How do I take a class by examination? Obtain a petition from the dean's office, and obtain permission from the dean of the school in which the class is offered.

How many classes can I take per quarter? A student can take as many as five or as few as three classes per quarter. Exceptions to this rule must be authorized by the dean of the student's school.

How many classes should I take per year? A student should take at least eleven classes per year (44 or more quarter units) if he expects to graduate in the normal four-year period.

What is satisfactory progress towards a degree? A degree should normally be completed in four years. At UCI, allowances are made for periods of poor scholarship, changes in major, and general indecision on the part of the student. Due to the Selective Service situation, a male student should check regularly with the dean of his school to make sure he is considered to be making normal progress.



FEES AND 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 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 fall quarter 1970 an Educational Fee will be assessed. The fee for undergraduates will be \$50 per quarter, and the fee for graduates will be \$60 per quarter. Starting fall quarter 1971, the fee will be \$100 per quarter for undergraduates and \$120 per quarter for graduates.

Resident Tuition (medical students)

M.D. candidates enrolled in the College of Medicine are required to pay a tuition fee of \$250 per year.

Nonresident Tuition (all students)

Students who are not classified as legal residents of the State of California are assessed a nonresident tuition of \$400 per quarter, payable at registration. (See Rules Regarding Residency Determination, p. 54.)

For undergraduate students enrolled in less than three courses, the nonresident tuition fee is \$136 per course or the proportionate part for a fractional course. Graduate and medical students are required to pay the full tuition of \$400 per quarter regardless of the number of courses undertaken.

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 Cali-

fornia, 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)	\$10
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

	Undergrad.	Grad.	Medical
University Registration fee	\$300	\$300	\$300
Educational Fee*	\$150	\$180	---
Tuition	---	---	\$250
Associated Students Fee	\$21	\$21	\$21
Room and Board in University Residence Halls	\$1140	---	---
Room and Board for Independent Students	---	\$1430	\$1430
Books and Supplies (approximate)	\$150	\$200	\$600
Personal Expenses (laundry, clothing, recreation)	\$450	\$450	\$450
Average Annual Expenses	\$2211	\$2581	\$3051

Nonresidents

All above fees apply	\$2211	\$2581	\$3051
Nonresident Tuition	\$1200	\$1200	\$1200
Average Annual Expenses	\$3411	\$3781	\$4251

*In the 1971-72 school year, the Educational Fee will be raised to \$100 per quarter for undergraduates, or \$300 per year. Graduate students will pay \$120 per quarter, or \$360 per year.



SCHOOLS AND DEPARTMENTS

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 the departments of Molecular Biology and Biochemistry, Developmental and Cell Biology, Psychobiology, and Population and Environmental Biology.

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 of local populations of fishes, plants, insects, and mammals; 2) Center for Pathobiology, an information and research unit, as well as a center for advanced study of disease in all types of animal and plant life; 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 14 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 333, 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* or *Graduate Programs in the Biological Sciences* from the Student Affairs Office of the School of Biological Sciences.

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

For the Fall of 1970 a program is being 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. The key features are: (1) The students will have a special tutor to guide them through their early college years. (2) The students will take liberal arts training continuously throughout their undergraduate and graduate years. (3) They will initiate research early in their college careers. (4) 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.
Molecular Biology and Biochemistry	M.S., Ph.D.
Developmental and Cell Biology	M.S., Ph.D.
Psychobiology	M.S., Ph.D.
Population and Environmental Biology	M.S., Ph.D.

Of the graduating seniors, approximately 1% will be awarded *summa cum laude*, 3% *magna cum laude*, and 8% *cum laude* honors. 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 will be given each spring to an outstanding graduate teaching assistant to be chosen by a committee.

Limitations on Enrollment

Students should be aware that, due to a burgeoning enrollment and limitations in facilities, registration in many biological sciences classes may be limited. Hence, it may take some students more than four years to complete their requirements for graduation unless they take some courses in the summer.

Because of the anticipated pressure for admission to the Core courses, it will no longer be possible to make exceptions to the stated prerequisites for these courses. Biology majors who plan to transfer from other institutions should inform themselves of these requirements and take the necessary courses, particularly those in general and organic chemistry, before coming to Irvine.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: Biological Sciences 100A-B-C-D-E-F (Core Curriculum); minimum of three satellite courses (see p. 85); Physics 3A-B-C or 5A-B-C; Mathematics 2A-B-C or 5A-B-C; Chemistry 1A-B-C; Chemistry 51A-B-C.

Planning a Program of Study

Biological sciences courses are built upon a base of the physical sciences. Majors, therefore, should take calculus and chemistry in their freshman year and organic chemistry in their second year.

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.

None of the courses in chemistry, physics, or mathematics that are required as prerequisites for a major in the biological sciences may be taken on a Passed/Not Passed basis.

The ability to write reports and to read with comprehension is essential for successful work in biology and the health sciences. Therefore, English is strongly recommended. Students who lack these skills are strongly advised to take formal instruction in writing. Medical schools require a year of college English.

The ability to read literature of science in French, German, and Russian is desirable. The mastery of one or two of these languages in many 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 333, 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 213.

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

Sample Program for Biological Sciences Majors

All courses in italics or their equivalents are required. Other courses are general recommendations. Premedical, preveterinary, pre dental, and other medical arts students should

add one year of English, and possible psychology, foreign language, physical chemistry, or other specific courses. Students planning a career in elementary or secondary teaching may choose electives among education courses in their junior and senior years.

	FALL	WINTER	SPRING
FRESHMAN	<i>Chem. 1A</i> <i>*Math. 2A</i> Biol. Sci. 2 (1/3 course) English 5 or Foreign Language **Elective	<i>Chem. 1B</i> <i>Math. 2B</i> Biol. Sci. 2 (1/3 course) English 10 or Foreign Language Elective	<i>Chem. 1C</i> <i>Math. 2C</i> Biol. Sci. 20 English 15 or Foreign Language
SOPHOMORE	<i>Biol. Sci. 100A</i> <i>Chem. 51A</i> *** <i>Physics 3A</i> Elective	<i>Biol. Sci. 100B</i> <i>Chem. 51B</i> <i>Physics 3B</i> Elective	<i>Biol. Sci. 100C</i> <i>Chem. 51C</i> <i>Physics 3C</i> Elective
JUNIOR	<i>Biol. Sci. 100D</i> Math. 170A Elective Elective	<i>Biol. Sci. 100E</i> Math. 170B Elective Elective	<i>Biol. Sci. 100F</i> ICS Elective <i>Biol. Sci. Satellite</i>
SENIOR	<i>Biol. Sci. Satellite</i> *** <i>Chem. 131A</i> Elective Elective	<i>Biol. Sci. Satellite</i> Chem. 131B Elective Elective	Elective Chem. 131C Elective Elective

*Math 5A-B-C may be substituted on the recommendation of an advisor.

**3 courses in Humanities, which would be satisfied by English or a foreign language, and 3 courses in Social Sciences or 3 courses in Fine Arts will fulfill UCI's Breadth Requirements; the "6" portion of the 6-3-3 requirement is automatically fulfilled for our majors by courses required in chemistry, mathematics, and physics. (See page 22.)

***Students may prefer to postpone physics until their junior year and take instead Math 3. Those who are inclined toward the physical sciences may prefer taking the Physics 5 series.

****Students planning a career in biochemistry or molecular biology may prefer taking physical chemistry in their junior year.

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 and for the College of Medicine. 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.) 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.

During the first year, students participate in the biological sciences graduate colloquium, a weekly discussion designed to familiarize students with the broad aspects of the biological sciences as they are represented in the School. 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 Science in the Biological Sciences

The language requirement for the M.S. degree is a reading knowledge of one foreign language, usually French, German, or Russian. 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.

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. The language requirement will normally be satisfied by the student's passing of reading

proficiency examinations in two foreign languages. German, French, or Russian are acceptable in meeting language requirements. 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 the three-quarter colloquium during his first year of graduate work in addition to 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 thesis research. The student submits a thesis 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*

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

Susan V. Bryant, Ph.D. University of London, *Lecturer in 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, Acting Director of The Irvine Arboretum, and 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, *Assistant Professor of Biological Sciences*

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 Curriculum*
- 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, *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*
- 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, Acting Director of Center for Pathobiology, and Professor of 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, *Chairman of Department of Psychobiology and 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*

Undergraduate Courses in Biological Sciences

Numbers of the following courses have been changed: 103 to 10; 150 to 15; 133 to 143; 134 to 144; 151 to 155; 152 to 156; 153 to 157; 154 to 158; 155 to 159; 156 to 160; 157 to 161; 149 to 166; 141 to 167; 142 to 168; 143A to 169A; 143B to 169B; 145A-B to 170; 130 to 180A-B; 290 to 291A-B-C.

* Joint appointments with UCI-California College of Medicine

Courses for Nonmajors Only

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

1A-B-C Introductory General Biology

Mr. Krassner/Staff

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. Prerequisite: None.

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

Mr. Granger/Mr. Wulff

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. Prerequisites: None.

11 Populations and Environments (1) S

Mr. Boughey/Mr. Dixon

Lecture. An introduction to Population and Environmental Biology. Prerequisites: None.

15 Introduction to Psychobiology (1) F

Staff

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 (numbered 20-50)

20 Diversity of Plants and Animals (1) S

Mr. Lenhoff/Staff

Lecture and lab/discussion. A modern introduction to representative members of the plant and animal kingdom. Prerequisites: None.

40 Population: The Vital Revolution (1) F, W, S

Mr. Lenhoff/Students

Lecture. 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. Prerequisites: None.

50 Human Ecology (1) W

Mr. Boughey

Multi-media course. Consideration of such natural 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. Prerequisites: None.

Core Curriculum

100A-B-C-D-E-F Biological Sciences Core Curriculum (Required of all Biological Sciences Majors.)

Due to the uniqueness of the biological sciences program at Irvine, it will be necessary for all majors to complete the Core program, encompassing two years of consecutive study. Three one-hour lectures, one three-hour lab per week. Prerequisites: One year of college chemistry with laboratory must be completed before taking 100A-B-C. One year of organic chemistry must be completed before taking 100D-E-F.

100A Cellular, Molecular, and Organismic Biology (1) F

Mr. Lenhoff

Introduction to the basic aspects of biochemistry and cell physiology needed to comprehend the subsequent sections of the Core curriculum. Subjects covered are cell ultrastructure, protein chemistry, enzymes, metabolism, photosynthesis, permeability, membranes, and molecular genetics. The subject matter is integrated by relating it to the biology of a simple organism.

100B Developmental Biology and Structure (1) W Staff
 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. Laboratories will reflect the lecture material and will cover basic exercises in developmental biology and the histology and anatomy of adult organ systems. Prerequisite: Biological Sciences 100A.

100C Organ Physiology and Psychobiology (1) S Mr. Koopowitz/Mr. Lynch
 Organ Physiology: Homeostasis in physiological systems with emphasis on whole organ physiology and coordination. Systems to be discussed include temperature control, osmoregulation digestion, muscle physiology, etc. Psychobiology: Emphasis will be placed on the neurological and biological bases of behavior. Overview of the brain, sensory systems, motor systems, non-specific systems, psychopharmacology, and learning and memory. Prerequisite: Biological Sciences 100B.

100D Genetics, Evolution, and Ecology (1) F Mr. Dixon/Staff
 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: Biological Sciences 100C.

100E Biochemistry (1) W Mr. Warner/Staff
 Structure and properties of proteins will be developed to make clear the basis of their participation as enzymes in biochemical reactions. The presentation of the sequences of reactions that constitute metabolic cycles and their interrelations and control will be the central part of the course. This will be followed by consideration of the biochemical basis of the transmission and expression of genetic information. In the laboratory a few fundamental topics will be emphasized. Prerequisite: Biological Sciences 100D.

100F Advanced Topics in Biochemistry; Man and Biology (1) S Mr. Lenhoff/Mr. Warner/Staff
 Bolstered by the preceding Core of courses, the student is enabled to consider at an advanced level topics ranging from the origin of life to the biological forces threatening the existence of life on our planet. Other topics may include biochemical evolution, metabolic diseases, immunology, medical microbiology, parasitology, population growth, eugenics, radiation, nutrition, birth defects, drugs, pollution, and environmental management. Prerequisite: Biological Sciences 100E.

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 Mr. Wulff
 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 100E.

***121 Immunology (1) W of even years** Mr. Granger
 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. Prerequisites: college course in biological sciences and one quarter of chemistry.

*Not offered 1970-71.

- *122 General Microbiology (1) S** of even years Mr. Woolfolk
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 100E.
- 123 Biophysical Chemistry (1) S** Mr. Warner
Lecture. Introduction to the use of the physical approach in the analysis of certain biological problems bearing on size, conformation, and structure of proteins and nucleic acids, and on the utilization of energy in biological systems. Thermodynamics and kinetic theory will be developed. Prerequisites: Organic chemistry and Biological Sciences 100E.
- 124 Virology (1) F** of even years Mr. Wagner
Lecture course. Consideration will be given to the 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. Prerequisite: Completion of Biological Sciences Core; genetics is recommended.
- 125 Biochemical Methodology (1) F** Mr. Stanley/Staff
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 100E and 100F; physical chemistry 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.
- 126 Biochemistry (1) F** Mr. McLaughlin/Staff
Lectures on metabolic mechanisms in cells. Special attention will be given to control mechanisms and application of organic reaction mechanism theory. Prerequisites: Biochemistry and molecular biology equivalent to Biological Sciences 100E and 100F; organic chemistry; physical chemistry highly desirable.
- 127 Enzymology (1) W** Mr. Woolfolk/Staff
Continuation of Biological Sciences 126 with emphasis on the basic aspects of enzymes. Consideration will be given to preparation and criteria of purity, kinetics, allosteric mechanisms, relation of primary and subunit structure to catalytic properties. Prerequisite: Biological Sciences 126.
- 128 Molecular Biology (1) S** Mr. Tessman/Staff
Biosynthesis of macromolecules; molecular genetics; coding; control mechanisms in replication, transcription, and translation. 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 will be opened to undergraduates who have completed the Biological Sciences Core and have taken physical chemistry. Prerequisite: Molecular Biology and Biochemistry 127 or 206 or general background in biochemistry and physical chemistry.
- 136 Developmental Biology (1) F** Mr. Ball/Mrs. Bryant
Lecture and laboratory. Genic, environmental and biochemical aspects of animal and plant development. An analysis of polarity, symmetry, differentiation, regeneration, cell movements, hormone activity, genic control, and abnormal growth in the development of plants and animals. Prerequisites: Biological Sciences 100A-B-C.
- 137 Genetics (1) W** Staff
Basic course of lectures in genetics, cytogenetics, and control of genic activity in higher organisms including man. Prerequisite: Biological Sciences 100C.

*Not offered 1970-71.

- 138A-B-C Comparative Organismic Physiology (1-1-1) F, W, S** Mr. Stephens
 A three-quarter satellite sequence in the comparative physiology of animals and plants. Three one-hour lectures, one three-hour lab per week.
- 138A (1) F** Mr. Stephens
 Maintenance aspects of physiology: water balance; feeding and digestion, metabolism; respiration and circulation. Prerequisites: Chemistry 51C, Biological Sciences 100C.
- 138B (1) W** Mr. Koopowitz
 Operational aspects of physiology: electrogenesis; nerve and muscle physiology; ciliary and amoeboid movement; turgor movements and sensory physiology.
- 138C (1) S** Mr. Arditti
 Hormonal and autotrophic aspects of physiology: hormones; environmental stimuli; photosynthesis and translocation.
- 143 Symbiosis (1) S of odd years** Mr. Krassner
 Lecture and laboratory. Introduction to the variety of symbiotic relations ranging from parasitism to mutualism. Prerequisite: Biological Sciences 100C or consent of instructor.
- 144 Cell Biology (1) S** Mr. Healey
 Lecture course in ultrastructure, function and structure of cellular organelles, relationships between nucleus and cytoplasm. Prerequisite: Biological Sciences 100B.
- 155 Seminar in Psychobiology (1) S** Staff
 A consideration of selected current research problems. Students will prepare and present papers. Prerequisites: Biological Sciences 15, 100C, knowledge of neuroanatomy, or any psychobiology satellite course, upper-division standing, and consent of instructor.
- *156 Motivation (1) F of odd years** Mr. Lynch
 Lecture and limited lab sessions. 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, generalization excitation. Prerequisite: college-level course in biological sciences with some knowledge of the nervous system.
- 157 Animal Behavior (1) S of odd years** Mr. Whalen
 An analysis of the genetic and experimental determinants of animal behavior. Prerequisite: Biological Sciences 15 or 100C.
- 158 Learning and Memory (1) F of even years** Mr. McGaugh/Mr. Thompson
 A consideration of basic issues concerning the nature of behavioral plasticity and information storage, and their neural substrates. Prerequisite: Biological Sciences 15 or 100C.
- *159 Arousal and Attention (1) W of even years** Mr. Weinberger
 A consideration of the behavioral characteristics and neural bases of sleep, wakefulness, and attention. Prerequisite: Biological Sciences 100C or 155 (formerly 151).
- 160 Neurophysiology (1) W of odd years** Mr. Verzeano
 Lecture and laboratory. An introduction to the basic functioning of the nervous system including neuron physiology and sensory system processing. Prerequisites: Biological Sciences 100C, one year of calculus, one year of physics.
- *161 Neurochemistry (1) S of even years** Mr. Cotman
 Lecture. 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 100E.
- 165 Introduction to Population and Environmental Biology (1) W** Staff
 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

*Not offered 1970-71.

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: Biological Sciences 1A-B-C for nonmajors; concurrent enrollment in Biological Sciences 100 Core for majors.

- 166 Population Ecology (1) F** Mr. Boughey
Lecture, laboratory, field. Illustrates some modern concepts of population ecology by reference to local terrestrial animal and plant communities. Each student will select a limited research problem within this area. Prerequisites: completion of or concurrent enrollment in Biological Sciences 100D and consent of instructor.
- 167 Field Biology (1) S** Mr. Atsatt
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. Prerequisites: Biological Sciences 100D and consent of instructor.
- 168 Vertebrate Biology (1) F** Mr. Justice/Mr. MacMillen
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 100D or consent of instructor.
- 169A Marine Ecology (1) F** Mr. Seapy
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 100D.
- 169B Field Marine Ecology (1) W of odd years** Mr. Seapy
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 180 (formerly 130) and 169A.
- 170 Evolutionary Processes (1) W** Mr. Atsatt
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 100D.
- 171 Plant Ecology: Vegetation and Ecosystem Dynamics (1) F** Mr. Rundel
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 100D and permission of instructor.
- 172 Physiological Plant Ecology (1) W** Mr. Rundel
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 100D and permission of instructor; a course in plant physiology is strongly recommended.
- 173 Physiological Animal Ecology (1) S** Mr. MacMillen
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 100D and consent of instructor.

- *180A-B Invertebrate Zoology** (1-1) W, S of even years Mr. Koopowitz/Mr. Seapy
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. Prerequisites: Biological Sciences 100A or consent of instructors. 180A is prerequisite for 180B.
- 181 Comparative Plant Morphology** (1) W Mr. Ball/Mr. Dixon
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. Prerequisite: Biological Sciences 100C or consent of instructors.

Honors and Special Courses

- 2 Freshman Seminar** (1/3) F, W Mr. Lenhoff/Staff
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. May be repeated by permission.
- 191A-B-C Special Study in Biological Sciences Projects** (1-1-1) F, W, S Staff
Involves library research, motivation programs, and other independent projects under an individual professor. Prerequisite: consent of instructor.
- 199A-B-C Special Study in Biological Sciences Research** (1-1-1) F, W, S Staff
Involves laboratory research under an individual professor. See page 78 for areas of interest and for 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

Because graduate study in the School of Biological Sciences is departmentalized, individual courses are listed under their respective departments. There is one interdepartmental course, however, which is required of all first-year graduate students:

- 291A-B-C Graduate Interdepartmental Colloquium** (½-½-½) F, W, S Mr. Lenhoff
Weekly colloquia will consist of oral research presentations by first-year graduate students.

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.

*Not offered 1970-71.

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
- Calvin S. McLaughlin: Biochemistry; nucleic acids; 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 to 3 per quarter) F, W, S Staff
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 Staff
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 Staff
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. Prerequisites: graduate registration and consent of the instructor.
- 204 Biochemical Methodology** (1) F Mr. Stanley/Staff
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 100E and 100F; 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.

- 205 Biochemistry (1) F** Mr. McLaughlin/Staff
Lectures on metabolic mechanisms in cells. Special attention will be given to control mechanisms and application of organic reaction mechanism theory. Prerequisites: Biochemistry and molecular biology equivalent to Biological Sciences 100E and 100F, organic chemistry; completion of or concurrent enrollment in physical chemistry is highly desirable.
- 206 Enzymology (1) W** Mr. Woolfolk/Staff
Continuation of Molecular Biology 205 with emphasis on the basic aspects of enzymes. Consideration will be given to preparation and criteria of purity, kinetics, allosteric mechanisms, relation of primary and subunit structure to catalytic properties. Prerequisite: Molecular Biology 205.
- 207 Molecular Biology (1) S** Mr. Tessman/Staff
Biosynthesis of macromolecules; molecular genetics; coding, control mechanisms in replication, transcription, and translation. Prerequisites: Molecular Biology 206.
- 208 Physical Chemistry of Macromolecules (1) W of even years** Mr. Warner/Staff
Lecture and discussion of the theory and application of the techniques available for investigating the physical properties of biologically important macromolecules, particularly proteins and nucleic acids. Prerequisites: basic calculus and thermodynamics and consent of instructor.
- 209 Advanced Immunology (1) W of odd years** Mr. Granger
Seminar and lecture course with formal lectures and literature study in certain key areas of immunology. Will also include student reports and discussions of topics chosen by participating students in areas of their personal interest. Prerequisites: Biological Sciences 121 and permission of instructor.
- 210 Biogenesis of Cell Organelles (1) S of even years** Mr. Tewari
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 100E and 100F.
- *211 Microbial Physiology (1) W of odd years** Mr. Woolfolk
Lecture and discussion including literature review and student reports. A study of the structure and function of representative microorganisms with emphasis on microbial physiology and enzymology. Prerequisites: the Core or general courses in microbiology and organic chemistry and approval of instructor.
- 280A-B-C Advanced Topics in Biochemistry and Molecular Biology (1-1-1) F, W, S** Staff
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** Mr. Wulff/Staff
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.

*Not offered 1970-71.

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, electron microscopy, cell, tissue, and organism culture, microsurgery, genetics, and neurophysiology.

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)
 Susan V. Bryant: Developmental biology (regeneration)
 Richard D. Campbell: Developmental biology (invertebrate development)
 Ralph W. Gerard: Physiology (general and neurophysiology)
 Patrick L. Healey: Cell biology, developmental biology (developmental cytology and ultrastructure)
 Harold Koopowitz: Physiology (sensory and invertebrate physiology)
 Howard M. Lenhoff: Physiology, developmental biology (marine invertebrate biology and comparative biochemistry)
 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 Staff
 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 Staff
 Advanced study in various fields of organismic biology. Prerequisite: graduate registration.
- 202A-B-C Microscopic Techniques in Developmental and Cell Biology** (1-1-1) F, W, S Staff
 Prerequisite: consent of instructor.
- 202A Scientific Writing** (1) F
 Preparation, editing, and review of manuscripts; study of graphic and other illustration techniques.

- 202B Microscopic Techniques (1) W**
 Advanced microscopic techniques studied from theoretical and practical points of view. Includes light, interference and phase microscopy, histology, autoradiography; and photomicrography.
- 202C Electron Microscopy (1) S**
 Theory and practice of electron microscopy; includes preparation and sectioning of materials used in ultrastructural and ultracytochemical analyses.
- 203A-B-C Graduate Tutorial in Developmental and Cell Biology (1-1-1) F, W, S** Staff
 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** Mr. Ball/Mrs. Bryant
 Consideration of some major problems in developmental biology, such as determination, differentiation, pattern formation, and morphogenesis in plants and animals. Prerequisites: Biological Sciences 100A-B-C.
- 230B Genetics (1) W** Mr. Stephens
 Covers basic diploid genetics, cytogenetics, and the control of genic activity in multicellular organisms. Prerequisites: Developmental and Cell Biology 230A.
- 230C Cell Biology (1) S** Mr. Healey/Staff
 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. Prerequisite: Developmental and Cell Biology 230B.
- 231A-B-C Physiology Graduate Core (1-1-1) F, W, S** Mr. Stephens/Mr. Koopowitz/Mr. Arditti
 Three lectures a week. Laboratory with permission of instructor. Prerequisites: Chemistry 51C, Biological Sciences 100C.
- 231A (1) F** Mr. Stephens
 Covers maintenance aspects of physiology: water balance, feeding and digestion, metabolism, respiration and circulation.
- 231B (1) W** Mr. Koopowitz
 Focuses on operational aspects of physiology, electrogenesis, nerve and muscle physiology, ciliary and ameboid movement, turgor movements and sensory physiology.
- 231C (1) S** Mr. Arditti
 Concerned with aspects of autotrophic physiology: photosynthesis; translocation, environmental stimuli, and hormones.
- *239 Cell Development (1) F** Mr. Campbell/Mr. Healey
 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** Mr. Dixon/Mr. Ball
 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 100A-B-C or consent of instructor.
- 260 Seminar on Advanced Topics in Developmental and Cell Biology (1) F, W, S**
 Mr. Schneiderman/Mr. Campbell/Mrs. Bryant/Mr. Krassner/Mr. Healey
 Topics will change from year to year. Subjects will be on major problems in development. Prerequisite: Developmental and Cell Biology 230A or written consent of instructor.
- 261 Seminar on Advanced Topics in Plant Physiology (1) F, W, S** Mr. Arditti
 Topics will change from year to year. Subjects will be on major problems in plant physiology. Prerequisite: Developmental and Cell Biology 231C or written consent of instructor.

*Not offered 1970-71.

- 262 Seminar on Advanced Topics in Sensory Physiology (1) F, W, S** Mr. Koopowitz
Topics will change from year to year. Subjects will be on major problems in sensory physiology. Prerequisite: Developmental and Cell Biology 231B or written consent of instructor.
- 263 Seminar on Insect Physiology (1) F, W, S** Mr. Schneiderman
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.
- 264 Seminar on Coelenterate Biology (1) F, W, S** Mr. Campbell/Mr. Lenhoff
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.
- 265 Seminar on Parasitology (1) F, W, S** Mr. Krassner
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.
- 266 Seminar on Comparative Physiology (1) F, W, S** Mr. Koopowitz/Mr. Stephens
Topics will vary from year to year. Prerequisites: graduate registration and consent of instructor.
- 267 Seminar on Morphogenesis of Vascular Plants (1) F** Mr. Ball
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.
- 290A-B-C Colloquium in Developmental and Cell Biology (0-0-0) F, W, S** Staff
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

Richard E. Whalen, *Chairman of the Department*: Neural and endocrine basis of behavior
 Carl Cotman: Neurochemistry, molecular psychology
 Roland Giolli: Experimental neuroanatomy
 Albert Globus: Experimental neuroanatomy and neurophysiology
 Gary Lynch: Neural bases of activation and arousal
 James L. McGaugh: Biological bases of learning and memory
 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

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 Staff
 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 Staff
 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.
- 203 Comparative Behavior** (1) W Mr. Whalen
 An analysis of the nature and bases of complex animal behavior with particular emphasis on the problem of "instinctive behavior". Prerequisite: consent of instructor.
- 204 Learning and Memory** (1) S Mr. McGaugh
 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. Prerequisite: consent of instructor.
- 205 Attentive and Motivational Processes** (1) S Mr. Weinberger/Mr. Lynch
 An analysis of the structure and function of peripheral and central nervous system processes underlying attention and motivation. Particular attention will be given to neurophysiological events involved in attention, arousal, and sleep. Prerequisite: consent of instructor.
- 206A-B-C Neurobiology** (1-1-1) F, W, S Mr. Weinberger/Mr. Thompson/Mr. Cotman/Mr. Giolli/Mr. Globus
 Lecture and laboratory. An integrated three-quarter course in the basic structure and function of nervous systems viewed from both gross and micro levels, using morphological, physiological, and biochemical approaches. Prerequisite: consent of instructors.
- 207A-B-C Experimental Neurobiology** (1-1-1) F, W, S Mr. Weinberger/Mr. Thompson/Mr. Cotman
 Research theory, techniques, and their application in neurobiology. Prerequisite: concurrent enrollment in Psychobiology 206.
- 208A-B-C Research Techniques in Neurobiology** (1-1-1) F, W, S Mr. Cotman/Mr. Thompson/Mr. Weinberger
 First-year graduate core course in psychobiology; required of all graduate majors.
- 241 Advanced Neurophysiology** (1) W of odd years Mr. Verzeano
 Psychobiology 241 and 242 comprise an integrated study of advanced neurophysiology, including conceptual, theoretical, and applied aspects of nervous system function. Prerequisites: Mathematics 2C, Physics 3B, Chemistry 51C, Elementary Statistics, Elementary Electronics, Psychobiology 206A-B-C, 207A-B-C.
- 242 Advanced Experimental Neurophysiology** (1) W of odd years Mr. Verzeano
 Prerequisite: concurrent enrollment in Psychobiology 241.
- 260 Seminar in Learning and Memory** (1) F, W, S Mr. McGaugh
- 261 Seminar in Hormones and Behavior** (1) F, W, S Mr. Whalen
- 262 Seminar in Neural Networks** (1) F, W, S Mr. Verzeano
- 263 Seminar in Brain and Behavior** (1) F, W, S Mr. Thompson
- 264 Seminar in Neurochemistry** (1) F, W, S Mr. Cotman

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| 265 Seminar in Psychopharmacology (1) F, W, S | Mr. Russell |
| 266 Seminar in Arousal and Attention (1) F, W, S | Mr. Weinberger |
| 267 Seminar in Motivation (1) F, W, S | Mr. Lynch |
| 290A-B-C Colloquium in Psychobiology (½-½-½) F, W, S | Staff |
- 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

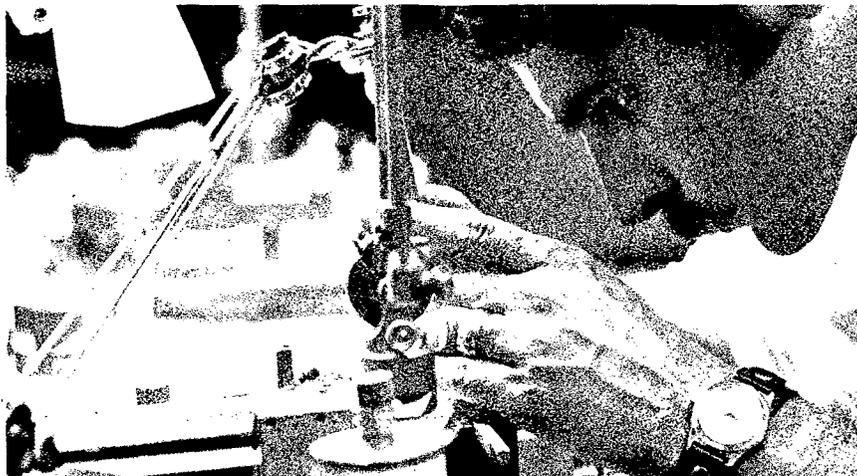
- Peter S. Dixon, *Chairman of the Department*: Psychology
 Peter R. Atsatt: Plant ecology and evolution
 Arthur S. Boughey: Human ecology
 Keith E. Justice: Computer simulated models, genetics, and ecology of animal populations
 Richard E. MacMillen: Physiological animal ecology
 Gordon S. Marsh: General 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 Staff
 Individual research under a particular professor. Prerequisites: graduate registration and consent of instructor.
- 201 Seminar in Population and Environmental Biology** (½) F Mr. Atsatt/Staff
 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 1 per quarter) F, W, S Staff
 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.

- *205 Plant Taxonomy (1) S**
Lecture, laboratory, field. Principles of taxonomy, including discussions, literature reviews, and student reports. While covering all principles of taxonomy, emphasis will be placed on plant taxometrics and numerical taxonomy. Prerequisites: graduate registration, or upper-division standing, and consent of instructor.
- 210 Tropical Biology: An Ecological Approach (3) W, Summer** O.T.S./Staff
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** O.T.S./Staff
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** O.T.S./Staff
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** Mr. Atsatt
- 221 Seminar in Human Evolution and Quaternary Biology (½ to 1) F, W, S** Mr. Boughey
- 222 Seminar in Phycology (½ to 1) F, W, S** Mr. Dixon
- 223 Seminar in Population Biology (½ to 1) F, W, S** Mr. Justice
- 224 Seminar in Vertebrate Biology (½ to 1) F, W, S** Mr. MacMillen
- 225 Seminar in Plant Ecology (½ to 1) F, W, S** Mr. Rundel
- 226 Seminar in Marine Ecology (½ to 1) F, W, S** Mr. Seapy
- 267 Field Biology (1) S** Mr. Atsatt
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** Mr. Seapy
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 100D.
- 269B Field Marine Ecology (1) W of odd years** Mr. Seapy
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** Mr. Atsatt
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 100D.

*Not offered 1970-71.



- 271 Plant Ecology: Vegetation and Ecosystem Dynamics (1) F** Mr. Rundel
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** Mr. Rundel
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)** Mr. MacMillen
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 semi-desert and desert-dwelling tetrapods. Prerequisites: graduate registration and consent of instructor.
- *280A-B Invertebrate Zoology (1-1) W, S of even years** Mr. Koopowitz/Mr. Seapy
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.
- 281 Comparative plant morphology (1) W** Mr. Dixon/Mr. Ball
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. Prerequisite: graduate registration.
- 290A-B-C Colloquium in Population and Environmental Biology (0-0-0) F, W, S** Staff
Invited speakers will introduce research and review topics within the area of population and environmental biology. Prerequisite: graduate registration.

*Not offered 1970-71.

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 corrosive 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, Black Theatre, Student Exhibitions, Dance Concerts, Friday One O'Clock Concerts, Dance Workshop, Drama Workshop, Music Workshop, and Film Production.

Degrees Offered in the School

Art	B.A., M.F.A.
Dance	B.A., M.F.A.
Drama	B.A., M.F.A.
Music	B.A., 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 22.

School Requirements: None (see under departments).

Graduate Program

The emerging sophistication among painters, sculptors, dancers, musicians, composers, singers, actors, directors, and choreographers today necessitates training artists in an intellectual environment, an environment which provides stimulation beyond technical facility. The artist cannot work in a vacuum: he is dependent upon a community for concepts, conversation, and communication. The atmosphere of the university provides the developing artist an ideal opportunity to live sensitively in the midst of accessible resources in a climate that is constantly vibrating with life and challenging our sensibilities.

Our aim is 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. We believe, then, that intellectual integrity is not incompatible with professional excellence and that, indeed, one cannot exist without the other.

Admission to Graduate Program

Applicants for admission to the program must:

- a. Meet the general requirements for admission to graduate status as set forth on page 56. Normally, the Graduate Record Examination will not be required.
- b. Present evidence of having completed an undergraduate major in art, dance, drama, or music substantially the same as offered at UCI, or satisfy the faculty in any one of the areas of specialization that he can perform successfully in the program.

- c. Audition, or present a recorded demonstration of performance, if applying for one of the performing arts programs; present a portfolio if applying for a studio major in art; present a manuscript if applying for a major in playwriting in the area of drama; present a composition if applying for a major in the area of music.

Upon admission to the program, the student will be assigned two graduate advisors for orientation and consultation.

Master of Fine Arts (M.F.A.) in Art, Dance, Drama, or Music

Two years in residence is normally required for all M.F.A. candidates. In addition to meeting the general university requirements as stated in the Announcement of the Graduate Division, candidates for the M.F.A. degree will be required to complete satisfactorily the requirements outlined below.

- a. Complete a minimum of 60 quarter units of graduate level courses or approved upper-division courses. Approved upper-division courses, not to exceed 20 units, taken as a graduate student may count toward the degree.
- b. (1) Prepare a "performance," "exhibition," "playwriting," or "composition" project, supported by a written essay of about 20 pages. Defend the project and the essay in a one-hour oral examination. Or,
 - (2) Prepare an essay of about 75 pages in the area of research; or a two-year notebook of at least 50 reviews if in dramatic criticism. Defend the essay or notebook in a one-hour oral examination.
- c. The language requirements will vary from none to two under Plan b(1), depending upon the area of specialization. The language requirements will vary from one to two under Plan b(2), depending upon the area of specialization. Satisfaction of a foreign language requirement shall be demonstrated, subject to the approval of the area of specialization, under one of the following options:
 - (1) Written or oral examination administered by area of specialization.
 - (2) Educational Testing Service Graduate School Foreign Language Test.
 - (3) Satisfactory completion of a course at a specified level.

ART

The program in art provides basic studio experiences in the fundamental knowledge and techniques of 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 22.

School Requirements: None.

Departmental Requirements

Studio Major: One year's work in visual fundamentals (Art 30A-B-C); one year's survey in history of art (Art 40A-B-C); two courses in contemporary art to be taken the first year (Art 109N, 129); six upper-division studio courses with at least three in 190 (Art 145 through 198); elect 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 Passed/Not Passed basis).

Art History Major: One year's work in visual fundamentals (Art 30A-B-C); one year's survey in history of art (Art 40A-B-C); eight 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), and Contemporary (Art 108, 108N, 109, 109N, 110N, 128, 129); 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 Passed/Not Passed basis).

Graduate Program

Master of Fine Arts in Art: See page 101.

Art Faculty

Larry Bell, *Lecturer in Art*

Vija Celmins, *Lecturer in Art*

Tony DeLap, *Associate Professor of Art*

John Paul Jones, *Lecturer in Art*

Craig Kauffman, *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*

Frank Roth, *Lecturer in 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 Art of the Ancient World (1)
- 103N Art of the Medieval World (1)
- 104N Leonardo and the Italian Renaissance (1)
- 105N Durer and the Northern Renaissance (1)
- 106N Rembrandt and the Baroque (1)
- 108N Impressionism and 19th-Century Art (1)
- 109N Picasso and 20th-Century Art (1)
- 110N Frank Lloyd Wright and 20th-Century Architecture (1)
- 112N Oriental Art (1)

- 127 History of Design (1)
- 128 Art and Technology (1)
- 129 New American Art (1)
- 130 Contemporary Scene (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 performance. The program is designed for students prepar-

ing 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 22.

School Requirements: None.

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 year's work in theory (Dance 20A-B-C); one year's work in music for dancers (Dance 120A-B-C); one course in dance notation (Dance 65A); one course in history of dance (Dance 110A, B, or 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 year's studio work in jazz (Dance 50A-B-C); one year's work in theory (Dance 20A-B-C); one year's work in music for dancers (Dance 120A-B-C); three courses in history of dance (Dance 110A-B-C); three courses in dance notation (Dance 65A-B-C); one course in dance criticism (Dance 125); 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 101.

Dance Faculty

Eugene Loring, *Professor of Dance and Chairman of Dance*

Donald Bradburn, *Lecturer in Dance*

William Couser, *Lecturer in Dance*

Paul Gleason, *Lecturer in Dance*

Olga Maynard, *Lecturer in Fine Arts*

James Penrod, *Assistant Professor of Dance*

Janice Gudde Plastino, *Assistant Professor of Dance*

Lower-Division Courses in Dance

20A-B-C Theories of Dance (1-1-1)

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)
Prerequisite: Dance 40A, B, or C (one quarter of Free-Style I).
- 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** (1-1-1)
- 112A-B-C History of Theatre Dance** (1-1-1)
- 120A-B-C Music for Dancers** (1-1-1)
- 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 22.

School Requirements: None.

Departmental Requirements

One year's 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 Passed/Not Passed); participation (acting or technical) in at least one major University Theatre production a year (Drama 60, 160, 196).

Graduate Program

Master of Fine Arts in Drama: See page 101.

Drama Faculty

Ian Bernard, *Lecturer in Drama*
Robert S. Cohen, *Assistant Professor of Drama*
Curt Conway, *Lecturer in Drama*
John Elliott, *Production Manager*
Clayton Garrison, *Professor of Drama and Dean of Fine Arts*
John Harrop, *Assistant Professor of Drama*
William Inge, *Professor of Drama*
Herbert Machiz, *Lecturer in Drama*
Richard Triplett, *Assistant Professor of Drama*

Lower-Division Courses in Drama

- 20 The Nature of Drama: Structure and Style (1)
Same as English 20.
- 25 Shakespeare (1)
- 30A-B-C Acting (1-1-1)
 - 30A Analysis of script and performance of scenes
 - 30B Characterization
 - 30C Styles of Acting
- 32 The Art of Writing: Drama (1)
Same as English Wr 32.
- 40A-B-C Development of Drama (1)
Same as English 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
- 101 Black Theatre (1)
May be repeated for credit. Admission by audition.
- 105A-B-C Technical Production (1-1-1)
 - 105A Costume
 - 105B Scenery
 - 105C Lighting
- 112 Playwriting (1)
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)**
Prerequisites: Two quarters of Drama 114 and 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 Scene 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 (½)**
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)
- 196 Repertory Theatre (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.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

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 year's work in history and literature of music (Music 40A-B-C); one year's work in counterpoint (Music 135A-B-C); one year's 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 Passed/Not Passed); 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 101.

Music Faculty

Colin Slim, *Professor of Music and Chairman of Music*

Maurice Allard, *Assistant Professor of Music and Conductor of the University Chorus*

Carol Boelter, *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)

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)

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)

All courses in the 160-169 sequence may be repeated for credit.

- 160 University Orchestra (½)
- 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)
- 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, Jr., *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 (planned), and Spanish. It offers elementary courses in Chinese, Hebrew, Italian, Portuguese, Swahili, and Swedish.

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 no specific course requirements, though every major sets its own requirements (see below); rather, students are urged to plan their programs thoughtfully so that their courses of study provide coherent wholes. The key to this is frequent consultation with advisors and discussion of alternatives rather than conformity to the usual pattern of a series of required courses.

A student entering the School of Humanities as a freshman is assigned to a lower-division advisor, with whom he plans his program through the first two years of his college career. Each student is required to meet with his advisor each quarter previous to his enrollment. In the last quarter of his sophomore year he is asked to declare a major and is then assigned to an upper-division advisor. At the outset of his career as a student he is offered more than one route to the decision to major. One of these is to enroll in either or both of the Humanities sequences, Humanities 1A-B-C and Humanities 2A-B-C, as freshman and sophomore respectively, and take work in course sequences introductory and prerequisite to those majors that may interest him. Generally each major field offers a year's prerequisite course or series of courses in which the student may explore the discipline and the implication of his choosing it as a major. Another route is not to elect the Humanities sequences, but instead to take a greater number of introductory sequences and electives from various programs. Combinations of these two routes are also possible. Students are held responsible, of course, for the campus breadth requirements (see p. 22). The student's advisor considers it his duty to make various possibilities clear, to provide a guide so that various options to major remain open, and to point out necessary avenues of study for those who may wish to qualify for entrance to graduate study or other professional work.

Undergraduate 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 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 classics, comparative literature, English, French, history, philosophy, and Spanish. A program in German is 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. 259).

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., M.A., Ph.D.
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.

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 is in effect a major that may be devised by individual students in consultation with the committee in charge of the program. At the end of the sophomore year a student who qualifies for the program by virtue of preparation and accomplishment may propose a specific program of study to the committee. It must be accompanied by a rationale. If the proposal is accepted, the student will be assigned to an advisor who is a member of the committee.

Undergraduate Courses in Humanities

Undergraduate courses in Humanities are under the direction of a faculty committee.

Humanities 1A-B-C (2)

This two-credit sequence is devoted to an introduction to problems fundamental to contemporary humanistic study. It ranges through a number of issues and through history and brings major texts in a variety of fields to bear upon the problems addressed. A program in expository writing is attached to the sequence. Since this sequence is considered a single course, students must enroll in all three quarters to gain credit. Enrollment will be restricted to freshmen majoring in the School of Humanities.

Humanities 2A-B-C (2)

A continuation of Humanities 1A-B-C. Since this sequence is considered a single course, students must enroll in all three quarters to gain credit.

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 in interdisciplinary topics or in topics in a particular discipline that are designed for study by students in other disciplines. In 1970-71 there will be seminars offered in linguistics, the Renaissance, and literary theory.

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 22.

School Requirements: None.

Departmental Requirements

Four separate majors: Greek, Latin, Classics, and Classical Civilization.

Greek: Greek 2A-B-C, 10, 102A-B-C; five more courses from Greek 100-199; Classics 152.

Latin: Latin 2A-B-C, 10, 102A-B-C; five 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, 162, 163; Philosophy 20A, 121; Art 101, 102; History 110A-B or History 112, 114.

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 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*
 Ronald F. Kotrc, M.A. University of Washington, *Acting Assistant Professor of Classics*
 Ralph W. Moss, M.A. Stanford University, *Lecturer in Classics*
 Lewis A. Sussman, Ph.D. University of North Carolina, *Assistant Professor of Classics*

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. No prerequisites.

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. No prerequisites.

Greek 99 Special Studies in Greek (1)

May be repeated. Prerequisite: Permission of the 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 199 Special Studies in Greek (1)

May be repeated. Prerequisite: Permission of the 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. No prerequisites.

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. No prerequisites.

Latin 99 Special Studies in Latin (1)

May be repeated. Prerequisite: permission of the 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)

Advanced studies of individual Roman authors such as Lucretius, Cicero, Tacitus, Seneca, and Petronius. For information regarding the specific authors offered in 1970-71, consult with the Departmental office. Prerequisite: Latin 101C or equivalent.

Latin 199 Special Studies in Latin (1)

May be repeated. Prerequisite: permission of instructor.

Classics 99 Special Studies in Classics (1)

May be repeated. Prerequisite: permission 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. No prerequisites.

Classics 151 Greek Literature in Translation (1)

A survey of Classical Greek Literature based on readings in English translation. No prerequisites.

Classics 152 Latin Literature in Translation (1)

A survey of Roman Literature based on readings in English translation. No prerequisites.

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. No prerequisites.

Classics 162 Classical Civilization I (1)

Based on readings from classical Greek and Roman authors in English translation as well as from secondary sources, this course is designed to give the student, through comparative study, a knowledge of the principles and patterns of public life and the intellectual and aesthetic achievements of ancient Greece and Rome. No prerequisites.

Classics 163 Classical Civilization II (1)

Based on readings from classical Greek and Roman authors in English translation and secondary sources as well as on visual aids, this course concentrates, from a comparative viewpoint, on the daily life and activities of man in ancient Greece and Rome. No prerequisites.

Classics 199 Special Studies in Classics (1)

May be repeated. Prerequisite: permission 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 of 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. 22) 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 22.

School Requirements: None.

Departmental Requirements

English: English 28A-B-C; CL 100A twice; CL 100B once; CL 101; E 102 or CL 102 twice; three courses above 102; 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 12 literature or allied courses in addition, of which ten must be upper division: normally these will include CL 100A, CL 100B, 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 it is given 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 above 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. 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 — carrying up to three courses' credit — 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. Requirement (3) may be satisfied by either of two methods: in Plan I, the student may elect to present a written essay in lieu of a written examination; in Plan II, however, the normal plan of study, the student is required to pass a written examination upon a designated reading list. 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.

As soon after completion of the general examination as is practicable, the student presents an essay to his advisory committee and is orally examined upon it and related subjects. Out of this essay should grow the dissertation. At this point the student is admitted to candidacy for the degree. 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. The student is offered the option, as in the M.A. in English, of Plans I or II, but Plan II is recommended. 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.

Following a successful examination the student is offered the option of writing the Master's Essay. Students of demonstrated professional ability, however, are encouraged to continue directly to the doctorate, and to divert to the Doctoral Dissertation the time and energy usually expended on a Master's thesis.

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

Howard S. Babb, Ph.D. Harvard University, *Professor of English and Chairman of the Department*

Hazard Adams, Ph.D. University of Washington, *Professor of English and Dean of Humanities*

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* (on leave fall and winter quarters)

Ralph A. Flores, M.A. Princeton University, *Acting Assistant Professor of Comparative Literature*

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* (on leave fall quarter)

Oakley Hall, M.F.A. University of Iowa, *Professor of English and Director of the Writing Center*

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* (on leave fall quarter)

Murray Krieger, Ph.D. Ohio State University, *Professor of English and Director of the Program in Criticism*

Frank Lentricchia, Ph.D. Duke University, *Assistant Professor of English*

Jay Martin, Ph.D. Ohio State University, *Professor of English and Director, Program in Comparative Culture*

- James McMichael, Ph.D. Stanford University, *Assistant Professor of English* (on leave winter and spring quarters)
- Robert L. Montgomery, Ph.D. Harvard University, *Professor of English and Associate Dean of Humanities* (on leave fall quarter)
- 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 Supervisor of Teacher Education*
- Harold Toliver, Ph.D. University of Washington, *Professor of English* (on leave winter and spring quarters)
- Shirley Van Marter, Ph.D. University of Chicago, *Assistant Professor of English*
- Albert O. Wlecke, Ph.D. Michigan State University, *Assistant Professor of English*
- Charles P. Wright, Jr., M.F.A. University of Iowa, *Assistant Professor of English*
- Max Wei Yeh, M.A. Columbia University, *Acting 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. 22.)
- 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 100A 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 100B Undergraduate Seminar in Literary History (1)**
Open to upper-division majors in English and Comparative Literature only. Sections limited

to 15 students. Each instructor announces a period of literary history or a major author to which the course will be devoted.

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.

E 181 The Structure of English (1)

E 184 History of English Language (1)

E 187 Selected Topics in English Linguistics (1)

E 188 Reading and Conference (1)

By consent, by arrangement. May be repeated.

CL 188 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 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.

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, Poetry, and Painting.

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 summer of the junior year.

Requirements for the Bachelor's Degree in French

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

French 10A-B, 12A-B-C, and seven upper-division courses of which at least five must be in literature.

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 11 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 based on a reading list. 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 another 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 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, one of which must be a romance language and the other another language relevant to the student's area of specialization and subject to the approval of the Department.

B. Course Requirements:

a) A minimum of 18 graduate courses or seminars in French beyond the B.A. The student must include in this minimum 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)*
- Andree G. Darling, *Visiting Scholar*
- Henri Diamant, Ph.D. Columbia University, *Assistant Professor of French and Associate Director, E.A.P., Bordeaux (1969-71)*
- Michael Freeman, A.B.D. University of California, Santa Barbara, *Acting Assistant Professor of French*
- 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, *Assistant Professor of French*
- Thérèse B. Lynn, A.B.D. University of Illinois, *Lecturer in French*
- Franco Tonelli, Ph.D. Louisiana State University, *Assistant Professor of French and Italian*

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)

Writing compositions on a variety of themes based on topical readings and classroom discussion. Review of selected grammatical topics on the context of the reading material. 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 French Civilization (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. Prerequisite: two upper-division literature courses.

131 Senior Seminar in Linguistics (1)

May be repeated. Prerequisite: Linguistics 50 or consent of instructor.

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)

299 Research in French Language and Literature (1)

May be repeated.

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. Prerequisite: normally three years of high school Italian or one year of college Italian.

DEPARTMENT OF GERMAN AND RUSSIAN

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. Instruction in first through fourth year Russian is also given, and the Russian section plans to have a major in Russian in 1970.

All courses in the Department are taught in German or Russian 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 or Russian will be gradually developed. In German 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 he 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.

Advanced placement in Russian will be determined by the Russian section according to the student's ability.

The Department also administers the self-instructional course in Swedish.

Requirements for the Bachelor's Degree in German

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

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

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 and Russian Faculty

Theodore Fiedler, Ph.D. Washington University, *Assistant Professor of German and Vice Chairman of the Department*

Jared Gordon, Ph.D. University of California, Los Angeles, *Assistant Professor of Russian*

Rainer Grenowitz, M.A. Cornell University, *Lecturer in Russian*

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. candidate, University of California, Berkeley, *Acting Assistant Professor of 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)

Reading of properly graded materials of literary and cultural significance. Class discussion and compositions based on the readings. Four hours a week in the classroom and assignments in the language laboratory when appropriate. One section of 2C will be devoted to Scientific German. Prerequisite: 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 quarters 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 on 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)

Lower-Division Courses in Russian

1A-B-C Fundamentals of Russian (1-1-1)

2A-B-C Second-Year Russian (1-1-1)

10A-B Russian Composition and Grammar Review (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. Four classroom meetings per week. Prerequisite: Completion of Russian 2C or equivalent.

11 Russian Phonetics (1)

Prerequisite: Russian 10B.

20 Russian Civilization (1)

Upper-Division Courses in Russian

101A-B Advanced Composition

A course devoted to advanced problems of composition and style.

150A-B-C Russian Literature in Translation (1-1-1)

180 Structure and History of the Russian Language

The purpose of this course is to provide a structural description of the language, which will aid in improving language skills and in possible future teaching, and will provide a basis for future graduate work in linguistics.

187 Selected Topics in Russian Linguistics

199 Special Studies in Russian (1)

Courses in Swedish

K1A-B-C Fundamentals of Swedish (1-1-1)

A self-instructional course in the fundamentals of Swedish 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.

DEPARTMENT OF HISTORY

History studies all recorded expressions of human activity. It is concerned with the characteristics of the various civilizations and the ways in which behavior and activity have shaped and been shaped by the personalities, institutions, cultures, and environments of our own and previous ages. It attempts to find human values in the record of man's achievements, and it presents methods of analyzing the past which can aid in the understanding of the present. Thus the study of history combines fascination for the quality of men and their times with the mature demands of a probing intellectual discipline.

Undergraduate Program

The History offerings begin with a core course, History 29A-B-C, which is required of all History majors, except for upper-division transfer students who have had at least one year-long survey in history in the lower division. Students at Irvine who intend to major in History should take the core course during their sophomore year. This course focuses on social structure and the central importance of the shift from traditional to industrial

society. Organized around a chronological framework, the primary emphasis is not on narrative but rather on structural analysis and on the clarification of key concepts. This course is open to all students in the University in addition to History majors.

In the upper division, History majors may select from a wide variety of offerings a minimum of seven courses, one of which must be in historiography. The undergraduate program culminates in a Senior Project. Here the student will spend the first quarter in background independent study; the second quarter stresses individual research related to similar topics pursued by other students in a small proseminar. In his junior year the student should take two upper-division courses which relate to the field in which he plans to enroll in a Senior Seminar; he should also be aware that in certain Senior Seminars the instructor may require students to be able to read the appropriate foreign language.

The History Department is currently planning an honors program for superior students.

Like its lower-division core course, upper-division courses in History are open to students majoring in other fields, though in some cases permission of the instructor is required.

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. They have full rights of participation and also serve on departmental committees, notably the Undergraduate and Graduate Committees. Students also play an important role in the evaluation of teaching by the faculty and the teaching assistants.

Students who have questions concerning History courses or the History major are encouraged to call upon the departmental office or their advisors for assistance.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

History 29A-B-C or, for upper-division transfer students, a year-long survey in history; seven upper-division courses, including one in historiography; History 199A-B (Senior Seminar).

Graduate Program

The spirit of innovation, stress on intellectual discipline, plus modernity and flexibility of method is central to the graduate program. We are supplementing the traditional concerns of graduate work in history with new emphasis in several areas:

1. the historiographical and philosophical bases of the subject;
2. the comparative and topical approaches to analysis;
3. the use of techniques and insights developed by sister disciplines;
4. the development of teaching experience on the university level.

The objective of the program is to provide future historians with a range of skills, attitudes, and insights useful in understanding and explaining the significance of the past in a rapidly changing world. It is our conviction that historians must combine their long-continuing interest in narrative studies with an increased concern for precision in method, relevant generalization, and effective communication, if they are to achieve the end in view.

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. *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 for the M.A.

Normally, 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 at least three letters of recommendation and Graduate Record Examination scores in Verbal and Mathematical Aptitude as well as Advanced History. Transfer credit from other universities is limited to one graduate course. 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 case of students of American history, a reading knowledge of one useful foreign language is required for the Master of Arts degree. The individual is expected to demonstrate this competence by achieving a score of 450 or better in the appropriate ETS (Educational Testing Service) language examination, given four times a year at this and other institutions. He may not enroll in a seminar requiring a foreign language, nor may he take the M.A. Field Examination, until he has met the language requirement. If he has not done this by the end of his third quarter in residence, the Department will review his record in order to determine whether he shall be allowed to continue.

A student of American 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 his requirement, he will 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, and have it approved by, his assigned Departmental advisor. *Individuals hoping to proceed to the Ph.D. should look ahead to their ultimate subject emphasis so that they may fit their work for the M.A. more usefully into their total program.* It will probably be desirable, for example, for such a student to select a field of examination for the M.A. which is closely related by area, period, or topic to his intended major field for the Ph.D.

During the Master's year, the student will prepare himself for a Field Examination in one of the following: America to 1840; America since 1840; Great Britain, 1485-1714; Great Britain since 1714; Europe since 1815.

The M.A. program consists of nine courses, all of which must be satisfactorily completed: Two courses in Historiography (taken in succession)(History 200A-B); two courses in a Research Seminar in his Field of Examination (taken in succession); three courses in Directed Reading in the Field of Examination (History 290); one Colloquium in the Field of Examination; one additional course related to the Field of Examination.

4. Time Limits

The Department encourages M.A. students to elect a full-time program, which normally can be completed in three quarters at the rate of three courses per quarter. Part-time students may have a maximum of six academic quarters to satisfy their requirements, but they are urged to proceed as rapidly as possible. Exceptions to these time limits require the approval of the Department Chairman.

5. The Field Examination

This examination will normally be given twice a year, in December and May. It will be a four-hour written examination, focusing on the significant events, ideas, and institutions of the chosen field and will require knowledge of the more important historical works and interpretations.

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. Since the Master's and Doctorate are closely coordinated at UCI (the individual's first year of graduate work being designed to prepare him for independent study), it is desirable that a student intending to obtain the Ph.D. here should begin his graduate work in the program. However, the Department will accept doctoral candidates who have achieved their M.A.'s elsewhere and can provide evidence of superior accomplishment in previous academic work. 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 evaluating his application for admission. Part-time enrollment will be possible only in very unusual circumstances.

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 quarter in the program. This is done by achieving a score of at least 450 on the appropriate ETS language examination, given four times a year at this and other institutions. Scores of examinations taken more than two years prior to admission to the doctoral program will not be accepted as satisfying this requirement. Students in American 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 requirements" (see paragraph 3, below) and will not be subject to the one-quarter time limit on achieving a foreign language competence.

3. Further 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 (either by achieving an ETS score of 450, 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 as defined in paragraph 4a, below. Any student who wishes to count courses which he has taken previous to his UCI graduate work in fulfillment of this requirement will be asked to pass special examinations 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. No student may enroll in a seminar requiring a foreign language without having passed his reading examination in that language. Any student who has not satisfied his language and/or language substitute requirements by the end of the quarter before his qualifying examinations must be prepared to take a leave of absence from the doctoral program in order to devote himself fully to the task.

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, and a field in related aspects of a discipline outside History.

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 other than that in the History of Science (e.g., History of Democratic Institutions, War in the Modern World, Comparative Industrialization, Comparative Social Change) a student must obtain the consent of *both* his advisor and the Coordinator of Graduate Advising. With such programs, care must be taken to insure that instructors are available and that an adequate concern for historical continuity is built into the approach.

b. Four historical periods will be offered as major fields by the Department in 1970-71: America since 1840; Europe since 1815; Great Britain, 1485-1714; Great Britain since 1714.

c. Comparable periods will be offered as minor fields in Ancient, Medieval, and early Modern European History, as well as in American and Latin American History.

Course requirements for doctoral students include the following:

a. One two-quarter seminar in the major field (normally taken during the first and second quarters of the first doctoral year). Students who have taken a seminar at Irvine on the M.A. level may, *with the permission of the major field advisor*, substitute two quarters of Directed Research (History 291) for this doctoral seminar.

b. One upper-division course in comparative history, supplemented with readings and special assignments from the instructor. This requirement may also be fulfilled by registering for a specific Directed Reading course (History 290) in comparative studies, administered by the Coordinator of Graduate Advising.

The remainder of the student's program in each quarter of his residence will consist of those colloquia, seminars, and courses in Directed Reading (after passing the qualifying examinations, Directed Research) with which he chooses to prepare himself in his major and minor fields 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 may be fulfilled either before or after the qualifying examinations. University regulations stipulate, however, that a student must be registered during all fall, winter, and spring quarters unless he has petitioned for and been granted a leave of absence.

Students with an M.A. from another institution will be required to take two quarters of graduate historiography (see the Master's program) if they have not previously had the equivalent.

5. Teaching Requirements

Doctoral candidates primarily interested in university or college teaching will be required to work with students in the undergraduate program as teaching assistants, or in comparable functions, with faculty encouragement and evaluation. Under the direction of his advisor, every doctoral student will be given at least some experience in lecturing, discussion-group leadership, preparation of examinations, and planning a course. Upon completion of the student's endeavors in these areas, the advisor is responsible for preparing a statement of evaluation which will be entered in the student's dossier. Students who have had, or are having, experience as Teaching Assistants may be excused from one or more of these requirements.

6. The Qualifying Examinations and Dissertation

After completion of course and other preparatory work (normally in six quarters) the student presents himself for written examinations in his major and minor fields and qualifying oral examination touching upon his entire program (except for the second minor), but with certain previously determined emphases. After passing the written and oral examinations, the student is advanced to candidacy for the Ph.D. and proceeds with his dissertation. The program culminates in a final oral examination over the subject area of the dissertation prior to the final acceptance of the work.

History Faculty

Gerald T. White, Ph.D. University of California, Berkeley, *Professor of History and Chairman of the Department*

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*

Richard I. Frank, Ph.D. University of California, Berkeley, *Assistant 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*

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, M.A. Columbia University, *Acting 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.

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 monarchical institutions during Saxon, Norman, and Angevin rule will provide a central background for a study of the culture and intellectual history of the period.

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.
- 133 The Shaping of Western Society: Historical Ideas in Conflict (1)**
Demonstrates teaching approaches themed around historical factors which have shaped western society: content areas will include parliamentary government vs. absolutism, ideas of equality, nationalism, industrialism, totalitarianism, revolutions, and problems of specific emergent nations.
- 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.
- 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.
- 151 Nineteenth-Century Latin American Dictators and Dictatorships (1)**
Same as Latin American Culture 3A. The causes, nature, and results of authoritarian regimes in Brazil and Spanish America.
- 152 Contemporary Latin America (1)**
Same as Latin American Culture 3B. Analysis of the revolutions in Mexico, Bolivia, and Cuba.
- 153 The Mexican (1)**
Same as Latin American Culture 3C. A social and cultural history of the Mexican from pre-Columbian civilizations, through the confrontation of Indian and European and the Mexican Revolutions of 1810 and 1910 to questions of cultural identity and discrimination north and south of the Rio Grande.

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.

167 Myth vs. Reality in American History (1)

Selected case studies of myth and reality in documents and writings of the American historical experience during the Colonial and National periods. Emphasis on analysis of data, historical method, and variations of interpretation.

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-orthodoxy, 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.
- 187 Scientific Study of Race Since 1749 (1)**
Scientific descriptions of human races and explanations of their origin from Buffon to the present. Emphasis on the ways in which biologists and social scientists dealing with race have been influenced by and influenced their societies.
- 190 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.
- 191 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.
- 192 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.
- 199A-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.

Graduate Courses in History

Historiography

200A-B History and its Related Disciplines (1-1)

The first quarter is devoted to a survey of historical technique. The second will explore the methods, concepts, and concerns of other disciplines which are closely related to History.

Colloquia

- 207 Intellectual Communities Since the Renaissance (1)**
Survey of the historical and sociological literature dealing with intellectual, especially scientific, communities. When and why have different kinds of intellectual communities come into being? What holds such communities together and how do they function? How do intellectual communities encourage and constrain the creativity of their members?
- 229 Nineteenth-Century Europe, 1789-1920 (1)**
An introduction to the literature of selected topics with European-wide significance, 1789-1920.
- 230 European Intellectual History, 1789-1950 (1)**
Readings, papers, and discussion on selected topics, including the nature of intellectual history, the interpretation and explanation of the thought of Marx, Nietzsche, and Freud.
- 246 Tudor-Stuart Britain (1)**
Readings, papers, and discussions on selected aspects of politics and society in the Tudor-Stuart era.
- 249 British Imperial History (1)**
Exploration of the major interpretative problems of the British Empire and Commonwealth, 1783 to the present.
- 254 Great Britain in the Nineteenth and Twentieth Centuries (1)**
Controversial personalities and problems of nineteenth and twentieth century Britain; intensive reading, papers, weekly discussion meetings.
- 266 Colonial and National America (1)**
Readings in the significant scholarly work on the revolutionary and early national period, 1763-1836.
- 269 Interpretation and Reinterpretation, 1860-1900 (1)**
An examination of the best of the literature as it relates to such major topics as Civil War and Reconstruction, the growth of industry, the organization of labor, agricultural expansion and agrarian protest, the politics of the era, and the nation's emergence as a world power.
- 270 Reform Movements in Modern America (1)**
The literature and interpretations of the Progressive Movement, the New Deal, and the Great Society.
- 276 American Foreign Relations (1)**
Readings, papers, and discussion designed to survey the great controversies regarding nineteenth and twentieth century foreign relations.
- 295 English Paleography and Diplomatics from the 15th Through the 17th Centuries (1)**
Designed to develop in the student the facility that he will require in reading the wide variety of hands, both official and unofficial, which he will encounter in the course of his research. In addition, the students will be introduced to the techniques of identifying, dating, and verifying materials in manuscript through the use of paleographic evidence.

Seminars

- 240A-B Twentieth-Century European Diplomacy (1-1)**
- 250A-B Britain in the Tudor-Stuart Era (1-1)**
- 255A-B Twentieth-Century Britain (1-1)**
- 274A-B American Intellectual History (1-1)**
- 277A-B American Economic and Social History (1-1)**
- 282A-B Intellectual Communities Since the Renaissance (1-1)**

Special Studies

- 290 Directed Reading (1)**
By consent. May be repeated.
- 291 Directed Research (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:

Chinese K1A, K1B, K1C

ESL (English as a Second Language) K1A, K1B, K1C

Modern Hebrew K1A, K1B, K1C

Portuguese K1A, K1B, K1C,

Spanish K1A, K1B, K1C

Swahili K1A, K1B, K1C

Swedish 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 talent 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 22.

School Requirements: None.

Program Requirements

- 1) Linguistics 50, 101, 102, 103;
- 2) Four additional upper-division courses in linguistics such as: Psycholinguistics; Sociolinguistics; 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.*

Cooperating Faculty in Linguistics

Richard Barrutia, Ph.D. University of Texas, *Associate Professor of Spanish*

Peter Colaclides, Ph.D. University of Athens, *Professor of Classics*

Michael Freeman, A.B.D. University of California, Santa Barbara, *Acting 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 (Chairman of the Linguistics Committee)*

Stanley M. Munsat, Ph.D. University of Michigan, *Associate Professor of Philosophy*

Alan Shaterian, Ph.D. candidate, University of California, Berkeley, *Acting 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*

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: Sound Patterns (1)

A general study of the sound features and description of the word. These structures will be illustrated by languages from various areas of the world. Prerequisite: Linguistic 50 or consent of instructor.

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.

*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.

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.

150 Studies in Linguistics

Topic varies depending upon availability and interest of staff.

190 Directed Reading**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)

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 22.

School Requirements: None.

Departmental Requirements

Philosophy 5 or 15 or 50; Philosophy 20A-B-C, 100, 110; four additional 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

*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).

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 judgement, 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 Epistemology). 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. 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.

*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.

Philosophy Faculty

Nelson C. Pike, Ph.D. Harvard University, *Professor of Philosophy and Chairman of the Department*

Gordon G. Brittan, Ph.D. Stanford University, *Assistant Professor of Philosophy*

Daniel C. Dennett, Ph.D. Oxford University, *Assistant 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, *Assistant 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.

20A 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: Philosophy 5 or permission of instructor.

20B 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 20A.

20C 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 20B.

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.

100 Metaphysics (1)

A study of the nature of reality and existence, this course deals with such problems as substance, free will, abstract objects, identity.

110 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.

115 Ethics (1)

Selected topics from recent moral philosophy, such as the naturalistic fallacy, the distinction between "is" and "ought," rule and act utilitarianism.

121 Plato (1)

A discussion of the central subjects in Plato 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 20A or permission of instructor.

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 20B or permission of instructor.

126 Continental Rationalism (1)

The function of this course is to acquaint the student in some detail with representative works of the more outstanding continental rationalists. Readings will consist of selections from Descartes, Malebranche, Leibniz, and Spinoza. Prerequisite: Philosophy 20C or permission 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 20C or permission of instructor.

128 Kant (1)

Typically a fairly close reading of the first half of the *Critique of Pure Reason*. Prerequisite: Philosophy 20C or permission of instructor.

130 Philosophy of Mind (1)

An examination of such psychological concepts as motive, intention, desire, memory, intelligence, belief. Prerequisite: Philosophy 20A-B-C or permission of instructor.

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.

140 Philosophy of History (1)

The analysis of issues such as the relativity of historical knowledge, the place of moral judgements in historical writing, the nature of historical explanation, and the "meaning" of history.

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 permission 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: permission 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. No prerequisite.

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.

183 Philosophical Ideas of Latin America (1)

Same as Latin American Culture 2. Philosophical currents in Argentina, Mexico, and Peru from Positivism to the present.

189 Philosophy of Sartre (1)**190 Directed Special Studies (1)**

May be repeated for credit.

199 Honors Thesis (1)

May be repeated for credit.

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.

200 Seminar in Metaphysics (1)

Prerequisite: Approval of the chairman.

210 Seminar in Theory of Knowledge (1)

Prerequisite: Approval of the chairman.

215 Seminar in Ethics (1)

Prerequisite: Approval of the chairman.

220 Seminar in History of Philosophy (1)

Prerequisite: Approval of the chairman.

221 Seminar in Philosophy of Plato (1)

Prerequisite: Approval of the chairman.

- 222 Seminar in Philosophy of Aristotle (1)**
Prerequisite: Approval of the chairman.
- 228 Seminar in Philosophy of Kant (1)**
Prerequisite: Approval of the chairman.
- 230 Seminar in Philosophy of Mind (1)**
Prerequisite: Approval of the chairman.
- 250 Seminar in Logic (1)**
Prerequisite: Approval of the chairman.
- 252 Seminar in Set Theory (1)**
Prerequisite: Approval of the chairman.
- 255 Seminar in Philosophy of Logic (1)**
Prerequisite: Approval of the chairman.
- 260 Seminar in Philosophy of Science (1)**
Prerequisite: Approval of the chairman.
- 265 Seminar in Philosophy of Religion (1)**
Prerequisite: Approval of the chairman.
- 270 Seminar Topics in Aesthetics (1)**
Prerequisite: Approval of the chairman.
- 280 Seminar in Contemporary Philosophy (1)**
Prerequisite: Approval of the chairman.
- 299 Directed Research (1)**
Prerequisite: Approval of the chairman.
- 399 University Teacher Training (1)**
Prerequisite: Approval of the chairman.

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 five 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 overview 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 22.

School Requirements: None.

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 Spanish and Spanish-American literature with a minimum of three in the latter.
- 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 1970-72)
- 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*
- 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*
- Cesar Rodriguez-Chicarro, M.A. Universidad Nacional Autonoma de Mexico, *Lecturer in Spanish*
- Augusto Salazar Bondy, Ph.D. Universidad de San Marcos (Lima, Peru), *Visiting Lecturer in Spanish and Portuguese and Comparative Culture*
- Zidia Stewart, M.A. Michigan State University, *Lecturer in Spanish and Portuguese*
- Tracy Terrell, Ph.D. University of Texas, *Lecturer in Spanish*
- William Truesdell, Ph.D. Brown University, *Assistant Professor of Spanish*
- Juan Villegas, Ph.D. Universidad de Chile, *Associate 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.

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)

Prerequisite: 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. Four classroom meetings per week. 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.

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)

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)

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)

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 committee (elected by the majors) serves in an advisory capacity to the Dean. Various departmental committees such as those concerned with teacher and curriculum evaluation include students as full members.

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 weighing 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, will choose courses of study leading to a major in one department. In carrying out this major, the student will often concentrate very heavily in a second department within the School, and, less frequently, will complete a double major.

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 chemistry and mathematics. Chemistry majors may have the added option of acquiring competence in Japanese.

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 5-10-15.

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 22.

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.

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 22.

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:

12 courses 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 for which calculus is either a prerequisite or corequisite.

(Neither Physics 3 nor Information and Computer Science 1 fulfills the above requirements.)

(The six courses not specified under (a) and (b) may be taken on a Passed/Not Passed basis subject to the usual restrictions on Passed/Not Passed enrollment.)

Foreign language:

Reading competence in one of the foreign languages French, German, Japanese, or Russian to be demonstrated by:

(a) completion of four years of high school work in the language, or

(b) satisfactory completion of two years of college work in the language, or

(c) passing technical reading examination administered by the University.

(Satisfactory completion of college work is established by a grade of C or better in the final quarter or semester, or by a grade of Passed if work is taken on a Passed/Not Passed basis, or by corresponding credit earned via the Credit by Examination option.)

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 math-

ematics 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. Because much of the important chemical literature has been and continues to be published in languages other than English, comprehension is required of at least one foreign language possessing a significant chemical literature.

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 satisfy the foreign language requirement through course work. Courses listed as electives may be used as needed to satisfy University and school requirements listed on page 22. It should be recognized that courses such as foreign language or 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	<i>ICS 1</i> <i>Math. 2A</i> Elective <i>Chem. 1A</i>	<i>Physics 5A</i> <i>Math. 2B</i> Elective <i>Chem. 1B</i>	<i>Physics 5B</i> <i>Math. 2C</i> Elective <i>Chem. 1C</i>
SOPHOMORE	<i>Physics 5C</i> <i>Math. 3A</i> Elective <i>Chem. 51A</i>	<i>Physics 5D</i> <i>Math. 3B</i> Elective <i>Chem. 51B</i>	<i>Physics 5E</i> <i>Math. 3C</i> Elective <i>Chem. 51C</i>
JUNIOR	For. Lang. Elective <i>Chem. 131A</i> <i>Chem. 150</i>	For. Lang. Elective <i>Chem. 131B</i> <i>Chem. 151</i>	For. Lang. Elective <i>Chem. 131C</i> <i>Chem. 152</i>
SENIOR	For. Lang. Elective <i>Math. 143A</i> <i>Chem. 213</i>	For. Lang. Elective <i>Chem. 180</i> <i>Chem. 202</i>	For. Lang. Elective <i>Chem. 180</i> <i>Chem. 215</i>

B.	FALL	WINTER	SPRING
FRESHMAN	Elective <i>Math. 2A</i> For. Lang. <i>Chem. 1A</i>	Elective <i>Math. 2B</i> For. Lang. <i>Chem. 1B</i>	Elective <i>Math. 2C</i> For. Lang. <i>Chem. 1C</i>
SOPHOMORE	Elective <i>Math. 3A</i> <i>Chem. 150</i> <i>Chem. 51A</i>	Elective <i>Math. 3B</i> <i>Physics 5A</i> <i>Chem. 51B</i>	Elective <i>Math. 3C</i> <i>Physics 5B</i> <i>Chem. 51C</i>
JUNIOR	For. Lang. <i>Biol. Sci. 100A</i> <i>Chem. 131A</i> <i>Physics 5C</i>	For. Lang. <i>Biol. Sci. 100B</i> <i>Chem. 131B</i> <i>Chem. 151</i>	For. Lang. <i>Biol. Sci. 100C</i> <i>Chem. 131C</i> <i>Chem. 152</i>
SENIOR	<i>Biol. Sci. 100D</i> Elective Elective <i>Chem. 201</i>	<i>Biol. Sci. 100E</i> Elective Elective <i>Chem. 233</i>	<i>Biol. Sci. 100F</i> Elective <i>Biol. Sci. 208</i> <i>Chem. 215</i>

C.	FALL	WINTER	SPRING
FRESHMAN	<i>JCS 1</i> <i>Math. 2A</i> Elective <i>Chem. 1A</i>	<i>Physics 5A</i> <i>Math. 2B</i> Elective <i>Chem. 1B</i>	<i>Physics 5B</i> <i>Math. 2C</i> Elective <i>Chem. 1C</i>
SOPHOMORE	<i>Physics 5C</i> <i>Math. 3A</i> For. Lang. <i>Chem. 51A</i>	<i>Physics 5D</i> <i>Math. 3B</i> For. Lang. <i>Chem. 51B</i>	<i>Physics 5E</i> <i>Math. 3C</i> For. Lang. <i>Chem. 51C</i>
JUNIOR	For. Lang. <i>Physics 111</i> <i>Chem. 131A</i> <i>Chem. 150</i>	For. Lang. Elective <i>Chem. 131B</i> <i>Chem. 151</i>	For. Lang. Elective <i>Chem. 131C</i> <i>Chem. 152</i>
SENIOR	<i>Math. 143A</i> Elective. <i>Chem. 231</i> Elective	<i>Math. 143B</i> Elective <i>Physics 112</i> Elective	<i>Math. 143C</i> Elective <i>Chem. 232</i> <i>Chem. 215</i>

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) a reading knowledge of one foreign language (Russian, German, Japanese, or French) and (2) successful completion of the area examinations. (3) 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 meeting the foreign language requirement and 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. The Ph.D. candidate must also demonstrate competence in one foreign language from among the four: Russian, German, Japanese, and French.

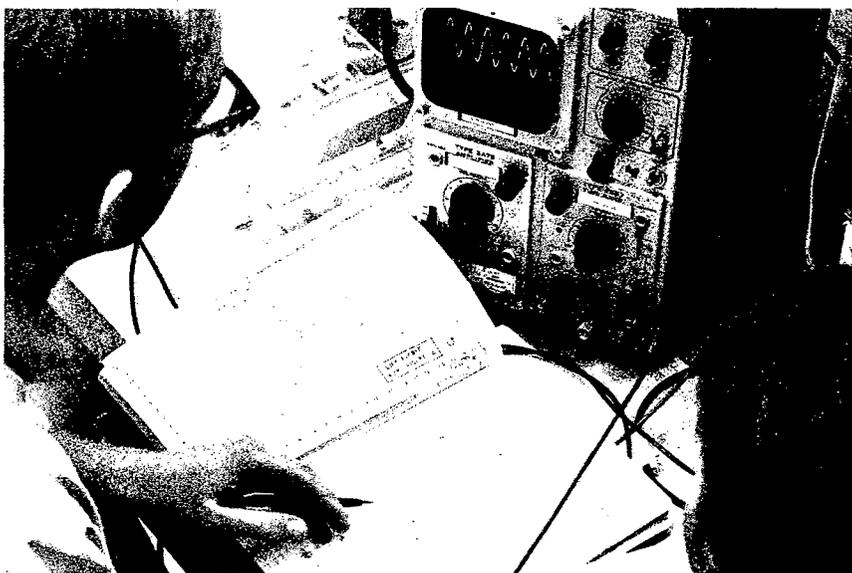
1. **Residence.** As many as three of the six quarters in residence may be waived for students who have had graduate work at another institution.
2. **Admission to candidacy.** Students entering graduate work in the program leading to the Ph.D. degree must pass area examinations in each of these three general fields of chemistry: physical chemistry, organic chemistry, inorganic chemistry, 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 successfully 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.** These requirements may be met by passing, with a minimum grade of C or Passed, a UCI language course numbered 2C or by passing a graduate reading examination administered by the University.
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, *Assistant Professor of Chemistry*

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*

Vincent P. Guinn, Ph.D. Harvard University, *Professor of Chemistry*

Edward K. C. Lee, Ph.D. University of Kansas, *Associate Professor of Chemistry*

George E. Miller, D. Phil. Oxford University, *Lecturer in Chemistry and Reactor Supervisor*

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, high school physics, three years of high school mathematics. 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 permission 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 permission 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.

131A (1) F

Topics covered are quantum chemistry, atomic and molecular structure, and spectroscopy. Prerequisites: Chemistry 1A-B-C; Physics 5A-B-C (concurrent enrollment in Physics 5C acceptable); Mathematics 2A-B-C.

131B (1) W

Covers classical thermodynamics of pure and mixed systems in gaseous and condensed phases. Prerequisite: Chemistry 131A.

131C (1) S

Topics covered are kinetic theory of gases, statistical mechanics, chemical kinetics, photochemistry, and structural chemistry. Prerequisites: Chemistry 131A-B.

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) W

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) S

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 permission of the Department.

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. Prerequisites: Chemistry 51A-B-C, 131A-B-C, and permission of the Department.

Graduate Courses in Chemistry

201 Kinetics and Mechanism of Organic Reactions (1) F

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) W

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 ther-

modynamics 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) S

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) (may not be offered in 1970-71)

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, three hours. Fundamentals of quantum mechanics will be discussed. The application of quantum mechanics to problems in atomic and molecular structures will be considered. Prerequisites: Chemistry 131A-B-C.

232 Statistical Mechanics (1) S

Lecture, three hours. 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)**

Lecture, three hours. Brief introductions are presented to nuclear structure, nuclear reactions, nuclear energy, radiochemical analyses, isotope effects, radiation chemistry, hot-atom chemistry, tracer methods, and nuclear processes as chemical probes. Prerequisites: Chemistry 131A-B-C or permission 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 permission of the Department.

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: permission 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: permission 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: permission 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.

*Not offered 1970-71.

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: permission of the Department.

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 22.

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, logic and computers, and advanced numerical analysis.

*These requirements are under study and may be changed in the future. Students majoring in Mathematics before 1970-71 should consult their advisors of the Department of Mathematics for information concerning requirements applicable to them.

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.

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, analysis, and geometry/topology are required for this degree. Examinations, both written and 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 and/or oral) designed to test the competence of the candidate in the fields of algebra, analysis, and geometry/topology.

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 and/or oral) designed to test the competence of the candidate in the fields of algebra, analysis, and geometry/topology.

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 research. He is expected to have breadth of knowledge in that he is required to demonstrate advanced knowledge and competence in algebra, analysis, and geometry/topology. 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.

NOTE: The Mathematics program is presently under study and may be changed. Students should consult the Department Catalog, issued in Fall 1970, for a complete listing of courses and subject content.

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, *Assistant 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*
- Donald A. Darling, Ph.D. California Institute of Technology, *Professor of 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, *Assistant Professor of Mathematics*
- 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*
- Stephan Karamardian, Ph.D. University of California, Berkeley, *Associate Professor of Mathematics and Administration (on leave 1970-71)*
- Balmohan V. Limaye, Ph.D. University of Rochester, *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 (on leave 1970-71)*
- David C. Newell, Ph.D. Brandeis University, *Assistant Professor of Mathematics*
- Janet L. Palmquist, Ph.D. Brandeis University, *Assistant Professor of Mathematics (on leave Spring 1971)*

- Paul H. Palmquist, Ph.D. University of Chicago, *Assistant Professor of Mathematics* (on leave Spring 1971)
- Bernard Russo, Ph.D. University of California, Los Angeles, *Assistant Professor of Mathematics*
- Noboru Suzuki, Ph.D. Tohoku University, *Associate Professor of Mathematics* (on leave Fall 1970)
- William H. Smoke, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics*
- Zenas M. Sykes, Jr., Ph.D. Johns Hopkins University, *Associate Professor of Mathematics*
- Michael E. Tarter, Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics and Medicine*
- Edward O. Thorp, Ph.D. University of California, Los Angeles, *Professor of Mathematics*
- 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, *Assistant 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*

Lower-Division Courses in Mathematics

2A-B-C Calculus (1-1-1) F, W, S

An integrated treatment of calculus and analytic geometry in which the subjects of differentiation, integration, and power series expansion of functions of a single real variable are discussed together with applications of these topics. Prerequisites: two years' high school algebra; one year high school geometry; one-half year trigonometry.

2A-B-C Calculus HONORS (1-1-1) F, W, S

The same topics as 2A-B-C treated at a higher mathematical and theoretical level. A different text from that of the regular 2A-B-C calculus sequence is generally used. Prerequisites: same as prerequisites for Mathematics 2A-B-C and also permission of instructor. (It is suggested that the student have had some calculus.)

3A-B-C Calculus and Linear Algebra (1-1-1) F, W, S

A continuation of 2A-B-C in which calculus is studied for functions of several variables and in which the topics of linear algebra (vectors, matrices, linear transformations, etc.) are treated in the context of analysis and differential equations. Prerequisites: Mathematics 2A-B-C or equivalent.

3A-B-C Calculus and Linear Algebra HONORS (1-1-1) F, W, S

A continuation of 2A-B-C HONORS. Prerequisites: Mathematics 2A-B-C HONORS, or Mathematics 2A-B-C and permission of instructor.

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 numeration (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 Biological, Management, and Social Sciences I

Each course in the sequence is a prerequisite for those following.

5A Probability (1) F

5B Calculus (1) W

5C Statistics (1) S

6A-B-C Mathematics for the Biological, Management, and Social Sciences II (1-1-1) F, W, S

Prerequisites: Mathematics 5A-B-C.

6A Linear Algebra (1) F**6B** Difference and differential equations (1) W**6C** Numerical methods (1) S**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 permission 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.

***105A-B-C Numerical Analysis (1-1-1) F, W, S**

Prerequisites: Mathematics 142A-B-C or 143A-B-C.

105A Interpolation, polynomial approximation, numerical differentiation and integration, difference equations, iterative solutions of nonlinear equations.**105B** Numerical solutions of linear systems, eigenvalue computations, finite difference methods for solving ordinary differential equations.**105C** Difference methods for partial differential equations (parabolic, hyperbolic, and elliptic).**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 3A-B-C.

***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 3A-B-C or equivalent.

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 3A-B-C.

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 3A-B-C or equivalent.

*Not offered 1970-71.

120A-B-C Algebra (1-1-1) F, W, S

An introduction to abstract algebra, including elementary group theory, linear and multilinear algebra, and the elementary theory of rings and fields. Prerequisites: Mathematics 3A-B-C.

121A-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 3A-B-C.

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 3A-B-C or 6A-B-C.

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 3A-B-C.

140A-B-C Advanced Calculus and Elementary Analysis (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 3A-B-C.

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 equivalent.

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 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 equivalent.

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 3A-B-C.

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.

150A-B-C Set Theory and Mathematical Logic (1-1-1) F, W, S

The choice axiom. Well-ordering. Ordinal and cardinal numbers. Formal systems. The propositional calculus. First order predicate calculus, consistency, completeness. Prerequisites: Mathematics 110A-B-C or 140A-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 3A-B-C.

170A-B Statistical Methods (1-1) F, W

A survey of the classical methods of estimation and testing including applications to linear

*Not offered 1970-71.

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.

***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 3A-B-C and consent of instructor or three quarters of upper-division mathematics.

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.

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, residues, analytic continuation, algebraic and elliptic functions, entire functions, normal families. Prerequisites: Mathematics 140A-B-C or equivalent.

***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.

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 equivalent.

231A-B-C Group Theory (1-1-1) F, W, S

Introduction to the theory of groups. Topics to be covered are 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 120A-B-C or equivalent.

***232A-B-C Theory of Finite Groups (1-1-1) F, W, S**

Introduction to the theory of finite groups. Topics to be covered will include 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 permission 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, and 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 or 140A-B-C.

*Not offered 1970-71.

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 semi-simple matrix groups and their representations. Prerequisites: linear algebra, point set topology, and basic analysis.

250A General Topology (1) F

Topological spaces, separation axioms, connectivity and compactness notions (such as paracompactness), function spaces, etc. Although this course overlaps the 110 sequence, it is much more intensive.

250B-C Algebraic Topology (1-1) 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 120C or 230A, and 110C or 250A.

***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 250C 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 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.

***268A-B-C Topics in Functional Analysis (1-1-1) F, W, S**

Selected topics in functional analysis, e.g., spectral theory, abstract Harmonic analysis, Banach algebras, operator algebras. Prerequisite: Mathematics 268C or consent of instructor.

270A-B-C Probability (1-1-1) F, W, S

Probability spaces, distributions and characteristic functions. Fundamental theorems such as 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 or 210A-B-C.

***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, semi-groups and infinitesimal generators of Markov processes. Prerequisites: Mathematics 210A-B-C or equivalent.

***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.

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.

*Not offered 1970-71.

***280A-B-C Mathematical Logic (1-1-1) F, W, S**

Boolean algebra, lattice 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. Topics to be covered are 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 permission 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.

299A-B-C Supervised Reading and Research (1-1-1) F, W, S

*Not offered 1970-71.

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; calculus helpful but not required	Calculus (Mathematics 2A); knowledge of computer programming is recommended	None
PREPARATION FOR ADVANCED COURSES	Physics 101, 102; Physics 5C with permission	All upper division courses in physics	None

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

Physics 5A-B-C-D-E; eight courses numbered between 110 and 190, including at least two quarters of advanced laboratory (Physics 151-153); Mathematics 2A-B-C, 3A-B-C; and three courses from Mathematics 142A-B-C, 143A-B-C, or 144A-B, with 143A-B-C particularly recommended.

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 permission 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. Other than Mathematics 2A-B-C there is no corequisite for students planning to enroll in only three quarters of Physics 5. 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.

The Physics 11, 12, 13 series is new and experimental. These 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.

Upper-division courses numbered between 100 and 109 are intended for nonphysics majors. They provide a means for students who have completed Physics 3 or Physics 5A-B-C to pursue specific parts of physics in depth without the requirement of advanced mathematics.

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.

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 "passed" or "not passed". 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 are enrolled in 1970-71. Active programs of research are underway in high-energy physics, solid state physics, low temperature physics, plasma physics, and mathematical physics.

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, nine graduate courses (200 series) 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.

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 pass, with an average grade of B or better, nine graduate-level quarter courses (e.g., three three-course sequences) other than the basic sequences, Mathematical Physics, Electromagnetic Theory, and Quantum Mechanics.
3. **Qualifying Examination.** For advancement to Ph.D. candidacy, a student must pass a qualifying examination consisting of a written and an oral part. The written part covers a broad range of the fundamentals of physics at the advanced undergraduate and graduate levels. Normally the M.A. comprehensive examination and the written Ph.D. qualifying examination will be identical, with a higher level of performance required for the Ph.D. qualification. The qualifying examination will generally be given once each year, in September, just prior to the start of classes. Under special circumstances a second examination may be scheduled during the winter quarter. The examination may be taken by some students after one year of graduate study; normally a student should plan to take it before entering his third year. A second attempt will be permitted if the first is not successful. A third attempt will be permitted only in extraordinary circumstances. Upon successful completion of the written examination, the student is examined orally by a committee composed of physics faculty members and one or two representatives from other departments. This examination completes the requirements for Ph.D. qualification. Like the written examination, it may be attempted more than twice only under 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. A typical program 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:

- 212A-B-C (Mathematical Physics)
- 213A-B-C (Electromagnetic Theory)
- 215A-B-C (Quantum Mechanics)

Second Year:

- 214A-B (Statistical Physics)
- 214C (Many Body Theory)
- 217A-B-C (Nuclei, Particles, Solids)
- 232A-B (Applications of Group Theory)
- 235A (Advanced Quantum Mechanics)

The second-year courses are intended to give the student a grasp of the phenomenology and current state of knowledge in a variety of research fields, and to provide him with the necessary advanced mathematical tools beyond those presented in the basic first-year sequences.

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*
- Kenneth W. Ford, Ph.D. Princeton University, *Professor of Physics (on leave 1970-71)*
- Sylvan Katz, Ph.D. University of California, Los Angeles, *Lecturer in 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 (on leave Fall, 1970 and Winter, 1971)*
- 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, *Assistant Professor of Physics and Associate 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, *Associate Professor of Physics*
- Gordon L. Shaw, Ph.D. Cornell University, *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** Mr. Parker
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 where convenient. Mathematics 2A is recommended but not required.
- 3B Basic Physics II (1) W** Mr. Mills
Electricity and magnetism; radiation and waves; optics; heat phenomena. Laboratory. Prerequisite: Physics 3A.
- 3C Basic Physics III (1) S** Mr. Van Hoven
Twentieth-century physics; relativity; quantum ideas; atomic and nuclear physics. Laboratory. Prerequisite: Physics 3B.
- 5A Fundamental Physics I (1) W** Mr. Bork
Newtonian mechanics. Laboratory. Facility in calculus is assumed. Knowledge of computer programming is recommended. Corequisite: Mathematics 2B.
- 5B Fundamental Physics II (1) S** Mr. Bork
Wave phenomena; relativity. Laboratory. Prerequisite: Physics 5A. Corequisite: Mathematics 2C.

- 5C Fundamental Physics III (1) F** Mr. Reines
Electrostatics; magnetostatics; currents and fields; circuit elements; Maxwell's equations. Laboratory. Prerequisites: Mathematics 2A-B-C, Physics 5B.
- 5D Fundamental Physics IV (1) W** Mr. Kropp
Quantum theory; atoms and nuclei. Laboratory. Prerequisite: Physics 5C. Corequisite: Mathematics 3B.
- 5E Fundamental Physics V (1) S** Mr. Kropp
Statistical physics; thermal phenomena. Laboratory. Prerequisite: Physics 5C. Corequisite: Mathematics 3C.
- 11 Topics in Physics I "Super-Cold" (1) F** Mr. Pellam
Superfluidity and other phenomena near absolute zero. No prerequisites.
- 12 Topics in Physics II "Newton" (1) W** Mr. Bork
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 "Symmetry and Relativity" (1) S** Mr. Mayer
Illustrations of the usefulness of symmetry concepts in describing physical phenomena and making predictions. Mathematical techniques will be developed along with the concepts. Relativity, both Galilean and Einsteinian, will be used to illustrate the concepts of symmetry of space-time. Physical applications will range from crystals through elementary particles. Prerequisites: at least a knowledge of algebra, geometry, and some mechanics, at high school level.

Upper-Division Courses in Physics

- 101 Atomic Phenomena (1) F** Mr. Kropp
Development of the quantum theory; atomic structure and atomic reactions; interpretation of spectra. Prerequisite: Physics 3C. This course is intended primarily for non-physics majors. No laboratory.
- *102 Nuclear Phenomena (1)**
Structure of nuclei; radioactivity; reactions; fission and fusion; subnuclear particles. Prerequisite: Physics 3C.
- 111A-B Classical Mechanics (1-1) F, W** Mr. Mandelkern
Mechanics of particles through Lagrangian and Hamiltonian methods; rigid bodies; relativity; coupled systems. Prerequisite: Physics 5D or permission of instructor.
- 112A Electromagnetic Theory (1) F, S** Mr. Shaw, Mr. Coulter
Electrostatics; magnetostatics; properties of matter. Prerequisite: Physics 5C. Corequisite: Mathematics 3.
- 112B Electromagnetic Theory (1) W** Mr. Shaw
Maxwell's equations; relativity; radiation; optics. Prerequisite: Physics 112A.
- 115 Statistical Physics (1) W** Mr. Burns
Microscopic theory of temperature, heat, and entropy; kinetic theory; multicomponent systems; quantum statistics. Prerequisites: Physics 5E, Mathematics 3C.
- 116 Thermodynamics (1) S** Mr. Burns
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** Mr. Burns
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.

*Not offered 1970-71.

- 131 Atomic Physics (1) W** Mr. Parker
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** Mr. Shaw
Nucleons and nuclear structure; radioactivity; neutron-proton scattering; the deuteron; nuclear reactions. Prerequisite: Physics 130.
- 133 Solid State Physics (1) S** Mr. Parker
Phenomena of solids and their interpretation in terms of quantum theory. Prerequisites: Physics 5D-E.
- 134 Astrophysics (1) W** Mr. Van Hoven
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** Mr. Van Hoven
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) S** Mr. Schultz
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)**
Interaction of radiation with matter; lasers; non-linear optics; optical properties of solids; absorption and scattering of light; modern spectroscopic techniques. Prerequisite: Physics 112B.
- 142 Contemporary Ideas in Physics (1) F** Mr. Reiter/Staff
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 permission of instructor.
- 150 Electronics (1) F** Mr. Condon
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 permission of instructor.
- 151-152-153 Advanced Laboratory I, II, III (1-1-1) F, W, S** Mr. Ushioda
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 permission of instructor. Physics 130-131-132 recommended but not required.
- 195 Undergraduate Research (1)** Staff
Open to seniors and occasionally to juniors with permission of Department.
- 199 Readings on Special Topics (1)** Staff
With permission of Department.

Graduate Courses in Physics

- 211A-B Classical Mechanics (1-1) W, S** Mr. Pellam
Variational principles and Lagrange's equations; two-body central force problems; rigid-body kinematics; equations of motion for rigid bodies; small oscillations; Hamilton's equations, canonical transformations; Hamilton-Jacobi theory; mechanics of continuous media and fields.

*Not offered 1970-71.

- 212A-B-C Mathematical Physics (1-1-1) F, W, S** Mr. Reiter
 Ordinary differential and partial differential equations; complex variables and special functions; matrices, eigenvalues, and eigenvectors; numerical methods; perturbation theory; integral equations; calculus of variations.
- 213A-B-C Electromagnetic Theory (1-1-1) F, W, S** Mr. Katz
 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** Mr. Wallis
 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** Mr. Mills
 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-C Quantum Mechanics (1-1-1) F, W, S** Mr. Bander
 Foundations of quantum theory; Dirac notation, basic operators and their eigenstates; perturbation theory; variational method; spin; Clebsch-Gordon coefficients; fine structure of atomic systems; scattering theory; formal collision theory; quantization of the electromagnetic field; relativistic quantum mechanics, second quantization.
- *216 Special Relativity (1)**
- 217A Nuclei (1) F** Mr. Schultz
 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.
- 217B Particles (1) W** Mr. Schultz
 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.
- 217C Solids (1) S** Mr. Wallis
 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.
- 221A-B-C Solid State Theory (1-1-1) F, W, S** Mr. Maradudin
 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.
- *222A-B Nuclear Theory (1-1)**
- *223A-B-C Elementary Particle Theory (1-1-1) F, W, S**
- *224 Atomic and Molecular Physics (1)**
- 225A-B-C Plasma Physics (1-1-1) F, W, S** Mr. Rynn
 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.

*Not offered 1970-71.

- 232A-B Applications of Group Theory (1-1) W, S** Mr. Maradudin
The role of symmetry in physical problems. Abstract group theory and the theory of group representations. Applications of point group symmetry to crystal field splittings of atomic levels and to molecular vibrations. The Jahn-Teller theorem. Directed valence. Double groups. The full rotation group, the Clebsch-Gordon coefficients, and the Wigner-Eckart theorem. Racah coefficients. Time reversal symmetry. Molecular quantum mechanics.
- 235A-B Advanced Quantum Mechanics (1-1) F, W** Mr. Coulter
Relativistic quantum mechanics, scattering theory, field theory. Prerequisites: Physics 215A-B-C.

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** Mr. Wallis/Staff
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** Mr. Bander/Staff
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.
- *264 Dispersion Relations (1)**
- *265 General Relativity (1)**
- *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).
- 267A-B-C Current Problems in High Energy Theory (1-1-1) F, W, S** Mr. Shaw/Staff
Study of current problems in theoretical high energy physics. Lectures mainly given by students. Course can be repeatedly taken for credit. Prerequisite: consent of instructor. Other topics will be added later.
- 295 Experimental Research (1 to 3)** Staff
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)** Staff
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, elementary particle physics, and general relativity.
- 299 Reading of Special Topics (1)** Staff
With special permission 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.

*Not offered 1970-71.



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, and 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, research 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 individual 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 22 under University Requirements.) The normal program for majors 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.

*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.

- 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*
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

*See page 22.

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 graduate 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, social, 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*
- 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, A.B. 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* (on leave 1970-71)
- Lyman Drake, Ph.D. Massachusetts Institute of Technology, *Lecturer in Political Science*
- Robert Dubin, Ph.D. University of Chicago, *Professor of Sociology and Administration*
- James E. Dunning, Ph.D. Claremont Graduate School, *Lecturer in Social Science*
- Julian Feldman, Ph.D. Carnegie-Mellon University, *Professor of Psychology and Information and Computer Science, Assistant Chancellor for Computing, Chairman of the Department of Information and Computer Science*
- Philip J. Epling, Ph.D. University of California, Irvine, *Lecturer in Social Science*
- 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* (on leave Fall 1970, on leave in residence Winter 1971)

- 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* (on leave 1970-71)
 Jean C. Lave, Ph.D. Harvard University, *Assistant Professor of Anthropology*
 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 Steffire, B.A. Reed College, *Associate Professor In-Residence of Psychology and Anthropology*
 Richard Stryker, M.A. University of California, Los Angeles, *Acting Assistant Professor of Political Science*
 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*
 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 1970-71. 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)** Staff
 A basic introduction to the models and tools of analysis of social science. No prerequisites.
- 2U The Earnestness of Being Important (1)** Mr. Froman
 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)** Mr. Burton
 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** Mr. Ahumada
Introduction to theory and methods of poll sampling, with emphasis on sampling error. Sampling errors in simple experiments. No prerequisites.
- 8U Perspectives of Human Analysis (1)** Mr. Froman
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)** Mr. Kirk
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** Mr. Boyd
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** Mr. Fielding
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)** Mr. Drake
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** Miss Birnbaum
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)** Mr. Butler
A basic introduction to sociology.
- 11K Introduction to Model Building in Geography (1) F, S** Mr. Werner, Mr. Amedeo
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)** Mr. Boyd
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)** Mr. Amedeo
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** Mr. Braunstein
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, and 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** Mr. Braunstein
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** Mr. Braunstein
Continuation (third quarter of Social Science 111R-S-T). Prerequisites: Social Science 111R-S.
- 116U Differing Perspectives on the Contemporary World (1) W** Mr. MacAndrew
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)** Mr. Fernandez
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)** Mr. Fernandez
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 permission 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** Mr. Amedeo
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** Mr. Amedeo
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)** Mr. Amedeo
A general examination of geographical analysis at an advanced level. Prerequisite: junior standing.
- 129U Political Anthropology (1)** Mr. Stryker
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)** Mr. Steffire
An analysis of the processes of social and cultural change with special attention to the role of entrepreneurial innovators.
- 130U Introduction to Psycholinguistics (1)** Mr. Chalmers/Mr. Wexler
Study of a particular topic in the psychology of language, with particular emphasis on syntax and semantics.
- 130V Psycholinguistics (1) S** Mr. Hamburger
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** Mr. Keller
An investigation of the processes of learning and memory on the human and sub-human 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** Mr. Werner/Mr. Fielding
Three-quarter sequence analyzing the internal structure of cities, central place theory, and the politics of urban change.
- 133R Psychology of Creativity (1) W** Mr. Degerman
A seminar devoted to the discussion of the psychological dimensions of literary and artistic creativity. Non-majors only.
- 134K Transportation Analysis (1) F** Mr. Werner
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** Mr. Werner
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** Mr. Werner
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** Mr. Barkan
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 permission.
- 136D Applications of Multidimensional Scaling (1)** Mr. Burton
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)** Mr. Boyd/Mr. Wexler
A discussion of current research in the area, including both syntax and semantics; new theoretica; developments will be stressed.
- 138D Cognitive and Semantic Problems of Bilingualism (1)** Mr. Chalmers/Mr. Epling
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** Mr. Braunstein
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)** Mr. Wexler
Syntactic and semantic development of language in the young child.
- 140D Models of Primitive Economies (1)** Mr. Burton
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 permission.
- 140R Computers in Psychological Research (1)** Mr. Braunstein
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 permission.
- 141D Social Organization (1)** Mr. Burton
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 permission.
- 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** Mr. Colby
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)** Mr. MacAndrew
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)** Mr. Steffire
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** Mrs. Lave
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)** Mr. Stryker
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** Mr. Hart
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 permission.
- 147U Computer Simulations of Social Science Models (1)** Mr. Newcomb
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)** Mr. Sudnow
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** Mr. Barkan
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)** Mr. Kirk
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** Mr. Colby
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** Mr. Fielding/Mr. Kemikimba
Social, economic, and political change which has accompanied urbanization in East Africa, with special reference to Tanzania.
- 150N Political Change (1)** Mr. Stryker
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** Mr. McCarty
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** Mr. Barkan
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)** Mr. Newcomb
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** Mr. Keller
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)** Mr. Kirk
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** Mr. Barkan/Mr. Schoenfeld
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 permission.
- 156N Comparative Political Parties and Electoral Systems (1) F** Mr. Barkan
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** Mr. Barkan/Mr. Stryker
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** Mr. Degerman
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** Mr. MacAndrew
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** Mr. Ahumada
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 permission.

- 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** Mr. Hamburger
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** Mr. Hamburger
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** Mr. Hart
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)** Miss Birnbaum
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 permission.
- 168U Social Deviance: The Problem of Drinking, Drunkenness and Alcoholism (1) F** Mr. MacAndrew
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)** Mr. Chalmers
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** Mrs. Wynne
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)** Miss Birnbaum
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** Mr. Amedeo
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** Mr. Colby
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)** Mr. Wexler
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** Mrs. Wynne
Advanced study of growth and development of children. Prerequisite: Social Science 171X.
- 188U Formal Models of Language (1) W** Mr. Hamburger
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)** Mr. MacAndrew
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)** Mr. Sacks
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)** Mr. Butler
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** Mrs. Lave
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** Mr. Braunstein
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** Mr. Keller
An investigation of the current developments in simulation with applications on the UC Santa Barbara Culler-Fried system.
- 280X Theory Building (1)** Mr. Dubin
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)** Mr. Werner/Mr. Amedeo
 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)** Mr. Hart
 This course will consider Senoi, Freudian, and Jungian methods of dream interpretation.
- 281U Language and Behavior for Graduate Students (1)** Mr. Steffire
 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)** Mr. Keller
 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** Mr. Ahumada
 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** Mr. Ahumada
 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)** Mr. Chalmers
 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** Miss Birnbaum
 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.

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, the programs now being offered emphasize electrical as well as civil and environmental engineering. In the future, several other programs will be added. While much of the curriculum will be common to all fields of engineering, students have the opportunity to do elective work in the areas of their special interest. Thus, in the junior and senior years, students may elect courses in addition to those required. It is expected that 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.

The undergraduate program in Engineering (Electrical) is accredited by the Engineers' Council for Professional Development.

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.

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.

ESUCI, the Engineering Student Society at Irvine, projects the nature of Engineering to the students and broadens their engineering experience.

Degrees Offered in the School

Engineering B.S., M.S., Ph.D.

Honors are awarded to graduating Engineering students who have achieved an overall grade point average of 3.5 or better.

Undergraduate Programs

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 must satisfy the University requirements for admission to advanced standing, must have completed 21 courses (84 quarter units) with an average of "C" (2.0), and must have completed the specific requirements for the junior courses to be undertaken in the School of Engineering.

Requirements for the Bachelor's Degree

University Requirements: See page 22. Note, however, that the breadth requirement does not apply to the School of Engineering.

School Requirements

Credit for 45 courses including the following:

COURSES	ENGINEERING (ELECTRICAL)*	ENGINEERING (CIVIL & ENVIRONMENTAL)
Engineering	Engr. 100A-B-C, 101A-B-C, 105A-B-C	
	6 electives	6 electives
Mathematics	6 courses	
Physics Chemistry Biology	8 courses in Physics and Chemistry or Biology	8 courses in Physics and Chemistry
		3 courses in Biology
Humanities, Fine Arts, Social Sciences	6 courses from one school, 3 in another	6 courses from one school
Computer Science	1 course	
Electives	3 technical, 3 free	

*Students who began their collegiate work in the University or in another college before 1966 should consult the School of Engineering regarding an alternative set of graduation requirements.

Programs of Study

Students are free to follow any 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. Lower-division students expecting to proceed to graduate study for the Ph.D. degree should also elect a foreign language, preferably German or Russian.

Students in community colleges may wish to elect engineering courses in the freshman and sophomore years; up to three such courses, while not prerequisite to courses in the School of Engineering, will be accepted in satisfaction of the free elective requirements of the School. Since UCI elects not to offer freshman and sophomore courses in engineering subjects and since other campuses do, students majoring in one of the schools at Irvine may have difficulty in completing their programs on other UC campuses in six quarters. (Students expecting to transfer elsewhere should consult with the School of Engineering immediately upon entry.) For transfer to Irvine there are no prerequisites for junior work in the School of Engineering other than the requisite mathematics and science courses.

In the junior and senior years the student, by suitable choice of technical electives, may orient his program toward either electrical or civil and environmental engineering. Representative programs which satisfy the requirements listed on page 22 are shown in Figures 1 and 2, below.

Courses outside of engineering (e.g., Information and Computer Science) may qualify as engineering electives. Consult the Dean's office for specific details.

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 "Passed/Not Passed" basis. With respect to engineering, such areas are fine arts, humanities, and social sciences.

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.

Sample Engineering Programs

FIGURE 1 – Typical program leading to the B.S. and M.S. degrees in Engineering (Electrical)

	FALL	WINTER	SPRING
FRESHMAN	<i>Math. 2A</i> <i>ICS-1</i> <i>Chem. 1A</i> <i>HSSFA (a)</i>	<i>Math. 2B</i> <i>Phys. 5A</i> <i>Chem. 1B</i> <i>HSSFA (a)</i>	<i>Math. 2C</i> <i>Phys. 5B</i> <i>Chem. 1C</i> <i>HSSFA (a)</i>

	FALL	WINTER	SPRING
SOPHOMORE	<i>Math. 3A</i> <i>Phys. 5C</i> <i>HSSFA (a)</i> Free Elective	<i>Math. 3B</i> <i>Phys. 5D</i> <i>HSSFA (a)</i> Free Elective	<i>Math. 3C</i> <i>Phys. 5E</i> <i>HSSFA (a)</i> Free Elective
JUNIOR	<i>Engr. 100A</i> <i>Engr. 101A</i> <i>Engr. 105A</i> <i>HSSFA (b)</i>	<i>Engr. 100B</i> <i>Engr. 101B</i> <i>Engr. 105B</i> <i>HSSFA (b)</i>	<i>Engr. 100C</i> <i>Engr. 101C</i> <i>Engr. 105C</i> <i>HSSFA (b)</i>
SENIOR	Free Elective Math. Elective Engr. Elective Engr. Elective	Free Elective Math. Elective Engr. Elective Engr. Elective	Free Elective Math. Elective Engr. Elective Engr. Elective
M.S.	Math. Elective Engr. Elective Engr. Elective	Math. Elective Engr. Elective Engr. Elective	Math. Elective Engr. Elective Engr. Elective

FIGURE 2 – Typical program leading to the B.S. in Engineering (Civil and Environmental)

	FALL	WINTER	SPRING
FRESHMAN	<i>Math. 2A</i> <i>ICS-1</i> <i>Chem. 1A</i> <i>HSSFA (a)</i>	<i>Math. 2B</i> <i>Phys. 5A</i> <i>Chem. 1B</i> <i>HSSFA (a)</i>	<i>Math. 2C</i> <i>Phys. 5B</i> <i>Chem. 1C</i> <i>HSSFA (a)</i>
SOPHOMORE	<i>Math. 3A</i> <i>Phys. 5C (d)</i> <i>Biol. 100A</i> Free Elective	<i>Math. 3B</i> <i>Phys. 5D (d)</i> <i>Biol. 100B</i> Free Elective	<i>Math. 3C</i> <i>Phys. 5E (d)</i> <i>Biol. 100C</i> Free Elective
JUNIOR	<i>Engr. 100A</i> <i>Engr. 101A</i> <i>Engr. 105A</i> <i>Engr. 161</i>	<i>Engr. 100B</i> <i>Engr. 101B</i> <i>Engr. 105B</i> <i>Engr. 162</i>	<i>Engr. 100C</i> <i>Engr. 101C</i> <i>Engr. 105C</i> <i>Engr. 163</i>
SENIOR	<i>Engr. 150A</i> Engr. Elective Tech. Elec. (c) <i>HSSFA (b)</i>	<i>Engr. 150B</i> Engr. Elective Tech. Elec. (c) <i>HSSFA (b)</i>	<i>Engr. 150C</i> Engr. Elective Tech. Elec. (c) <i>HSSFA (b)</i>

- (a) Humanities, Social Sciences, or Fine Arts elective.
 (b) Recommended Courses: An upper-division sequence in Social Sciences (may be taken in sophomore year).
 (c) Mathematics, Physics, Chemistry, Biology, Information and Computer Science, or other on approval of advisor.
 (d) Or Chemistry 51 A-B-C.

A new program in Environmental Management to be initiated in the near future leads to a B.S. in both Biological Sciences and Engineering. Students will acquire a firm background in engineering and biological science by completing the core curriculum in both of these fields in addition to the requisite mathematics, physics, and chemistry. Through elective courses the student can then learn how fundamental principles can be brought to bear against environmental problems such as air and water pollution, transportation, and population problems.

For further information, contact the School of Engineering or the School of Biological Sciences.

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 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, communication and information theory, pattern recognition, optical systems, and quantum electronics. In the civil and environmental engineering area there is at present a program in water quality and resources.

For the M.S. degree with thesis, nine courses will be 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 will be limited to one course per quarter if fully employed, and those holding research or teaching assistantships will not be permitted a full four-course load. Engineers in industry may find it convenient to complete some undergraduate 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. will be tailored to the individual needs and backgrounds of the student. There will be 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 including languages; 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*

Blair E. Bona, Ph.D. University of Utah, *Lecturer in 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*

Robert J. Jezik, Ph.D. Purdue University, *Lecturer in Electrical Engineering*

Robert C. K. Lee, Sc.D. Massachusetts Institute of Technology, *Associate Professor of Aerospace Engineering*

Lester Mintzer, M.S. Ohio State University, *Lecturer in Electrical Engineering*

Kenneth W. Nielsen, M.S. University of Utah, *Lecturer in Electrical Engineering*

Charles G. Pardo, 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*
- Robert M. Saunders, M.S. University of Minnesota, *Professor of Electrical Engineering and Dean, School of Engineering*
- Jan W. Scherfig, Ph.D. University of California, Berkeley, *Assistant Professor of Civil Engineering*
- Roland Schinzinger, Ph.D. University of California, Berkeley, *Assistant Professor of Electrical Engineering*
- Khalil Seyrafi, Ph.D. University of California, Los Angeles, *Lecturer in 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*
- Alexander Takacs, M.S. Lehigh University, *Lecturer in Electrical Engineering*
- David T. Tuma, Ph.D. University of California, Berkeley, *Assistant 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

Introduction to the concepts of 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 (or consent of instructor).

102 Signal Theory (1-1) F, S

Representation of signals — Fourier series, Fourier and Laplace transforms, orthogonal representation. Convolution integral, sampling theory, introductory communication theory, amplitude and phase modulation and demodulation, signal correlation. Prerequisite: Engineering 100B.

103 Energetics (1) S

Classical thermodynamics and application to the flow of energy. Energy conversion from one state to another. Conservation of energy and momentum principles and their applications. Gauss' Law, Poynting theorem, and Manley-Rowe relationship. Prerequisite: Engineering 101B.

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, programming methods; reliability theory and practice; system simulation methods; design project. Prerequisites: Engineering 100B, 103.

105A-B-C Measurement Engineering (1-1-1) F, W, S

The basic principles of laboratory practices, including instrumentation, measurements, simulations, modeling, and design.

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 circuits, pulse circuits, linear operational amplifiers, and integrated circuits. Prerequisite: Physics 5D or consent of instructor.

- 111A-B-C Network Analysis and Synthesis (1-1-1) F, W, S**
 Definition of signal and waveforms, network equations, application of transform methods to network analysis and synthesis. Approximation methods for transfer function synthesis. Feedback networks. Application to stochastic design, frequency domain, and time domain synthesis. Prerequisite: Engineering 100A.
- 112 Active Electronic Circuits (1) S**
 Interaction of active and passive devices in electronic circuits. Circuit modeling of transistors, device-circuit environment interactions, design of single-stage amplifiers, cascaded stages, coupling problems and frequency response. No prerequisites.
- 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 operations research. Mathematical optimization techniques and probability theory concepts which find application during the design, development, and evaluation of systems. Prerequisite: Mathematics 3C, Engineering 126A, or Mathematics 130A.
- *117A-B Reliability Engineering (1-1) F, W**
 Statistical and probabilistic aspects of reliability of engineering. Analysis of systems with dependent components. Majority voting, redundant codes, adaptive schemes, and redundancy in digital systems. Reliability models and statistical parameter estimation. Multi-mode systems with drift, marginal, catastrophic failures. Prerequisite: Mathematics 3C.
- 122 Introduction to the Logic and Organization of Digital Computers (1) F**
 Introductory course in 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 and systems programming as seen by the computer system architect. Addressing techniques, assembly systems, sorting and converting data, program segmentation and linkage, service programs, schedules, and translators. Prerequisite: Engineering 122.
- 124A-B Switching Circuits and Computer Logic (1-1) W, S**
 Introduction to switching circuits for computers, representations (codes, geometric forms); implementation (switching networks, storage elements), and digital systems. Basic characteristics of combinatorial and sequential networks. Prerequisite: Engineering 122.
- 126A-B Random Processes and Systems Theory (1-1) W, S**
 Fundamental theories of probability and stochastic processes from an engineering viewpoint. Application of the theory to the analysis of the response of linear and nonlinear systems to stochastic inputs. Prerequisite: Engineering 102.
- 130A-B-C Materials and Fields (1-1-1) F, W, S**
 Electromagnetic wave propagation, introduction to quantum and statistical mechanics and band theory of solids. Prerequisite: A course in probability, or consent.
- *131 Introduction to Electrical Gas Discharges (1) S**
 An introduction to the macroscopic and microscopic behavior of electrical discharges in gases. Prerequisites: Engineering 101A-B.
- 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 101B or Physics 112B.

*Not offered 1970-71.

140A-B-C Control System Theory (1-1-1) F, W, S

Linear methods including Laplace transforms, convolution integrals, transfer function, pole-zero topics, stability, frequency response. Nonlinear methods phase spaces, analogue and digital computers. Sampled data systems including sampling processes, Z-transform, stability criteria, and digital compensation. Prerequisite: Engineering 102, Mathematics 100C, or consent of instructor.

146A-B Astrodynamics and Rocket Navigation (1-1) F, W

Practical application of celestial mechanics and allied fields to the navigation, guidance, and control of space and atmospheric entry vehicles. Prerequisite: Mathematics 3C.

150A-B-C Structural Mechanics (1-1-1) F, W, S

Stress and strain torsion, axial and shear forces, bending moment, beam deflections, statically determinant and indeterminate structures, elastic stability, energy principles, virtual displacements, design of reinforced concrete beams, matrix structural analysis. Prerequisite: Engineering 100A.

***154 Soil Mechanics (1) F**

An introduction to the mechanics of soils. Composition and classification of soils, compaction, compressibility and consolidation, shear tests, seepage, bearing capacity, lateral pressure, footing design, retaining walls, piles. Prerequisites: Engineering 100A, 101A.

155 Fluid Mechanics (1) S

Incompressible fluid mechanics. Conservation relations, stresses, similitude, potential flows, turbulence, boundary layers, creeping motion, separation, wakes. Prerequisite: Engineering 101B.

156 Compressible Flow (1) S

Inviscid compressible flow of a gas. Channel flow, Fanno, and Rayleigh flows. Oblique shock waves, detached shock waves, external linearized supersonic flows, hypersonic approximations and implications of viscosity. Prerequisite: Engineering 155.

161 Introduction to Environmental Engineering (1) F

Basic principles of meteorology, surface water hydrology, and ground water hydrology in relation to environmental planning. Prerequisites: Mathematics 3C, Physics 5B.

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 and Waste Treatment (1) S

Chemical and biological aspects of air, water, and solid waste management. Prerequisite: Engineering 103 (may be taken concurrently).

195A-B-C-D-E-F The Engineer and Engineering (½-½-½-½-½-½) F, W, S

A seminar course simultaneously involving students from freshmen to graduate students presenting subjects germane to the practice of engineering and not normally involved in other courses. (May not be used to satisfy graduation requirements for the School of Engineering or the School of Physical Sciences.) Prerequisite: None (may be started in any quarter).

198 Group Studies for Undergraduates (½ or 1)

Group study of selected topics in engineering. Prerequisite: consent of instructor.

199 Individual Study (½ or 1)

For undergraduate engineering majors in supervised but independent reading or research on engineering topics of current interest. Prerequisite: consent of instructor.

Graduate Courses in Engineering

210 Fourier Optics (1) W

Fourier integral representations of spatial signals. Plane-wave expansions. Diffraction theory.

*Not offered 1970-71.

Fourier transforming and imaging properties of lenses. Spatial-frequency analysis of optical systems. Spatial filtering and optical information processing. Holography. Prerequisites: Engineering 101A-B, 102.

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 126A-B, 210.

***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. Nonlinear optical processes with applications to optical electronic devices and systems. Prerequisites: Engineering 138C and Physics 130, 131.

***220A-B-C Pattern Recognition (1-1-1) F, W, S**

Same as Information and Computer Science 254A-B-C. The theory and design of machines that detect and recognize patterns in geometric images, sounds, and sequences of symbols. Threshold logic, training theory, multilayer machines, artificial intelligence, stochastic approximation, unsupervised training, spatial computers, image filters, and topological processing. Prerequisites: Mathematics 130A-B-C or Engineering 126A-B.

221A-B Trainable Automata (1-1) W, S

Markov chain models of learning phenomena in pattern recognizing machines and human signal detection; trainability, adaptivity, train-work scheduling, single-operator model, and stimulus sampling theory. Convergence properties of training algorithms; training without a teacher, *game-theoretic iteration*; *adaptive sample set construction*; *trainable committee machines*; stopping rules. Prerequisites: Mathematics 130A-B-C or Engineering 126A-B.

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 126A-B.

***228A-B Communication and Information Theory (1-1) W, S**

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 126A-B.

***231A-B Guided Electromagnetic Waves (1-1) W, S**

Analysis and design of components and networks for guided electromagnetic waves, with emphasis on the microwave regions. Prerequisites: Engineering 101A-B.

240A-B-C Modern Control Theory (1-1-1) F, W, S

Formulation of optimal control theory for deterministic systems. Necessary and sufficient conditions for the existence of solution to the optimal and sub-optimal problem. Computational methods for solution and the feasibility of implementation. The use of approximation theory and functional analysis concepts for formulation and solution of optimization problems. Prerequisites: Engineering 140A-B-C, Mathematics 140A-B-C.

241A-B-C Stochastic Control Systems (1-1-1) F, W, S

Fundamental estimation theory, sequential estimation and estimation errors. Error analysis of stationary and non-stationary systems. Classical Wiener filter and prediction theory in mean square optimization. Optimal Bayesian control. Stochastic stability and control. Adaptive control systems and methods of identification. Prerequisites: Mathematics 130A-B-C, Engineering 240A-B-C.

*Not offered 1970-71.

- 242A-B-C Game Theory for Systems Analysis (1-1-1) F, W, S**
 Presentation of classical game theory concepts of n-person general sum games, coalitions, differential and stochastic games. Applications to the decision process, control, and resource allocation in engineering, economic, and management systems. Prerequisites: Engineering 115C, 126B, Mathematics 143C.
- 244A-B-C Optimization Theory (1-1-1) F, W, S**
 Indirect (analytical) and direct (search) methods of optimization: classical methods of the calculus and Lagrange multipliers, geometric, linear, integer, quadratic, nonlinear programming, stagewise optimization and dynamic programming. Necessary and sufficient conditions algorithms, numerical examples, and sensitivity analyses for each of the foregoing. Prerequisite: Engineering 104C.
- *255A-B-C Hydrodynamics (1-1-1) F, W, S**
 Mechanics of incompressible viscous and inviscid fluid motion. Stokes and Oseen flow, laminar boundary layer, vorticity, potential flow, conformal mapping, surface waves, perturbation theory, jets, turbulence, Reynolds stresses, turbulent boundary layer, phenomenological theories. Prerequisite: Engineering 155 or equivalent.
- 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 Treatment and Resources Technology (1-1-1) F, W, S**
 The essential aspects of advanced water and waste treatment. Flow through porous media. Dispersion and turbulent diffusion of pollutants. Prerequisites: Engineering 101B, 163.
- *265A-B Water and Air Treatment Chemistry (½-½) F, W**
 Inorganic and organic chemistry of water and wastes. Emphasizes the chemistry of natural waters, quality changes from contact with soil, supersaturation phenomena and complex equilibria. Chemistry of organic pollutants including pesticides and their degradation products. Emphasizes theory and practice of analytical procedures. Prerequisites: Chemistry 1A-B-C, Engineering 163.
- *266 Public Health Aspects of Environmental Engineering (1) W**
 Public health aspects of water engineering. Aquatic microbiology, virology. Bacteriological water quality standards. Water-borne diseases. Principles of epidemiology and toxicology. Prerequisites: Biological Sciences 1A-B-C.
- 268A-B-C Environmental Resources Systems — Planning, Design, and Evaluation (½-½-½) F, W, S**
 Fundamentals of planning small and large civil engineering systems. Emphasis on optimization of integrated water collection, waste treatment, and water re-use systems. Qualitative and quantitative design criteria for public works. Economic evaluation of alternative systems. Prerequisites: Engineering 104A-B-C, 263A-B-C, Mathematics 130A.
- 285A-B-C Methods of Engineering Analysis (1-1-1) F, W, S**
 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. No prerequisites.
- 298 Group Seminars or Studies (unit credit varies) F, W, S**
 Group studies on various subjects related to engineering given through seminars on topics to be selected each quarter. Prerequisite: consent of instructor.
- 299 Individual Study or Research (1-1-1) F, W, S**
 May be repeated each quarter. Individual research or investigation under the direction of an individual faculty member. Prerequisite: consent of instructor.

*Not offered 1970-71.



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 not "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 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.

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 two other cultures.

Comparative Culture majors participate in academic affairs by electing 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 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; (2) student discipline; (3) invitation of occasional lecturers.

Degrees Offered

American and Comparative Culture	Ph.D.
Comparative Culture	B.A.

Students majoring in Comparative Culture must receive at least a 3.5 grade point average in Comparative Culture courses in order to receive honors at graduation.

Undergraduate Program

Requirements for the Bachelor's Degree in Comparative Culture

University Requirements: See page 22. Students are encouraged to complete the UCI breadth requirements by the end of the 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 each of two other cultures; (4) Comparative Culture 1, to be completed by end of sophomore year; (5) 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. 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 achieve competence in a language related to his areas of specialization and will satisfy the 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 the 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. 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. 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.

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*
- Richard Alatorre, M.A. University of Southern California, *Lecturer, Political Science and Comparative Culture*
- Sandra Barkan, M.A. University of California, Los Angeles; Makerere University College (Uganda); *Lecturer, African Literature*
- Raul Fernandez, M.A. Claremont Graduate School, *Acting Assistant Professor of Economics and Comparative Culture*
- James Flink, Ph.D. University of Pennsylvania, *Associate Professor of History and Comparative Culture*
- George Kent, Ph.D. University of California, Berkeley, *Associate Professor of Intellectual History and Comparative Culture*
- May E. Loh, B.A. National Central University (Chungking, China), *Lecturer in Chinese Language*
- Oliver L. E. Mbatia, M.S. Oregon State University, *Acting Assistant Professor of Economics and Comparative Culture*
- Carlton Moss, *Lecturer in Black Culture*
- George O. Roberts, Ph.D. Catholic University of America, *Professor of Sociology and Comparative Culture*
- Joaquin Sanchez, M.S. California State College, Los Angeles, *Assistant Dean of Students*
- G. Singh, M.A. Mahendra College (Punjab University), and Punjabi University, *Teaching Assistant in Comparative Culture*
- Louis Smith, *Lecturer in Black Culture*
- Dickran Tashjian, Ph.D. Brown University, *Assistant Professor of English and Comparative Literature and Comparative Culture*
- Sharlie Ushioda, M.A. Harvard, *Lecturer in Asian Culture*
- Joseph L. White, Ph.D. Michigan State University, *Professor of Psychology and Comparative Culture*

Courses in Comparative Culture

- 1A-B-C Man in Cultural Perspective (2-2-2) F, W, S** Mr. Flink/Mr. Roberts/Mr. White/Staff
 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. Beyond class assignments, the student will be expected to undertake a program of independent reading that will form the basis for a substantial research paper, due during the third quarter of the course. Required of all Comparative Culture majors; prerequisite to the major. To be completed by the end of the sophomore year.

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 Namibia) 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.) by taking at least six upper-division courses.
- (C) Two years of a vehicular African language (indigenous or foreign).
- (D) Completion of course Senior Seminar on Africa (African Culture 114, 115).

Courses in African Culture

- 100 **Social Structure and Change in Sub-Sahara Africa (1) F** Mr. Roberts
Comparative analysis of societies in "Black" Africa which have recently gained their independence from colonial rule.
- 102 **Social Structure and Change in the Middle East (1) W** Mr. Roberts
Survey of the impact of religion, politics, colonialism, and acculturation upon developments in the Middle East since 1914.
- 104 **History of Eastern Africa (1) S** Mr. Roberts
Survey of the major events and personalities which influenced the nature of social organization and change in Eastern Africa before 1945.
- 105 **Race Relations in Africa (1)** Mr. Roberts
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.
- 107 **Introduction to African Literature (1) F** Mrs. Barkan
An introduction to the contemporary literature of sub-Saharan Africa. Topics to include definition and contrasts with Western literature; significance of African literature to society and politics. (Students entering the course should have a working knowledge of current events in Africa.)

- 108 **Economic Geography of Africa** (1) W Mr. Mbatia
 Analysis of the natural resources of Africa, in light of problems posed by the physical and human factors of geography.
- 109 **The Novel in French-Speaking Africa** (1) W Mrs. Barkan
 A tracing of the evolution of the novel in French-speaking Africa, with focus on such authors as Bernard Dadie, Mongo Beti, Sembene Ousmane, and Camara Laye. (A good reading knowledge of French is essential.)
- 110 **Racial and Ethnic Relations in Africa** (1) W Mr. Roberts
 Analysis of the nature and consequences of relations among different population and ethnic groups. Focus will be upon the impact of differential awareness upon social stratification and economic and political participation.
- 111 **Social Structure and Change in the Maghreb** (1) Mr. Roberts
 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) Mr. Roberts
 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 **The Cultural Heritage of Africa Through Contemporary African Literature in English** (1) S Mrs. Barkan
 A general survey of literature in English-speaking Africa to delineate the impact of indigenous and alien cultures upon the themes, styles, and aspirations of the authors.
- 114 **Senior Seminar on Africa** (1) F Mr. Roberts
 (Topic to be announced.) Foreign aid and Socio-Cultural Change: The Experience of New Nations in West Africa. (Open to seniors in African Culture *only*.)
- 115 **Senior Seminar on Africa** (1) S Mr. Roberts
 Challenge and Response in Internal Conflict: The African Experience with Militarism and the Subversion of Governments.
- 199 **Directed Reading** (1) F, W, S Mr. Roberts/Staff

American and Comparative Culture

A 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 I. 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 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, 102A-B, 104A-B, 107A-B-C, 150A-B-C, or other courses the Program may designate. He will take four courses in each of two other cultural areas

in the Comparative Culture Program. Upon advisement, additionally, he will select eight courses from two of the following areas: 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.

Courses in American Culture

- 101A-B-C American Arts (1-1-1) F, W, S** Mr. Tashjian
Each quarter the same as one section of Comparative Literature 104. A three-quarter sequence devoted to a study of the relationships among American visual and literary art out of the commonality of cultural experience. Emphasis will be placed upon exploring the creative possibilities inherent in American culture. In addition to American literature and paintings, gravestones, furniture, photography, and technological art will be studied. Entrance by permission of instructor only. Credit for year sequence only.
- 102A American Communities (1) W** Mr. Flink
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 permission of instructor only.
- 102B American Communities (1) S** Mr. Flink
Same as History 168B. An interdisciplinary examination of American community culture and American attitudes toward community in the twentieth century. Entrance by permission of instructor only. Prerequisite: American and Comparative Culture 102A.
- 104A Nineteenth-Century American Ethnography (1) W** Mr. Flink
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** Mr. Flink
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 permission of instructor only.
- 105 Literature and Society (1) S** Mr. Clecak
Same as one section of Comparative Literature 104.
- 106A Contemporary Black Poetry (1) F** Mr. Simon
Same as one section of English 103.
- 106B Modern American Ethnic Literature (1) Summer** Mr. Simon
An examination of the literature produced by the Irish, Jewish, and Armenian immigrant cultures in America. Readings, largely in prose fiction, have been selected with the design of illustrating the social and artistic transformations which have recently culminated in the work of such writers as J. F. Powers, Bernard Malamud, and Richard Hagopian.
- 107A The American Novel to James (1) F** Miss Reed
Same as one section of English 103.
- 107B Modern American Poetry (1) W** Mr. Lentricchia
Same as one section of English 103.
- 107C Modern American Fiction (1) S** Mr. Tashjian
Same as one section of English 103. Studies in the major American novelists between 1900 and the present time.
- 108A-B The Limits of Reform in Modern America (1-1) F, W** Mr. Olin
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.

- 109A-B American Foreign Relations in the Twentieth Century (1-1) F, W** Mr. Nelson
Same as History 178A-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.
- 110A-B-C American Intellectual History (1-1-1)** Mr. Diggins
Same as one quarter of History 174A-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, Freudianism, and Existentialism. Students are expected to have some background in either literature, philosophy, political theory, or theology.
- 150A-B-C Seminars in Problems in American Culture (1-1-1) W, S**
***150B Problems in American Philosophy (1)**
An investigation of such major American philosophers as William James, George Santayana, and C. S. Peirce.
- 150C The World's Columbian Exposition (1) S** Mr. Martin
A study of the 1893 World's Fair as an expression of a period of critical changes in American culture, including economics, architecture, art, society, and technology.
- 199 Directed Reading (1) F, W, S** Staff

Asian and Comparative Culture

Basic Requirements for the Concentration in Asian Culture

- The introductory course in Chinese-Japanese Civilization (Asian Culture 100A-B-C) or the equivalent.
- 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.)
- 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** Mrs. Loh
- 2A-B-C Modern Chinese (1-1-1) F, W, S** Mrs. Loh
- 3A-B-C Modern Japanese (1-1-1) F, W, S** Mrs. Ushioda
- *4A-B-C Modern Japanese (1-1-1) F, W, S** Mrs. Ushioda
- *100A-B Introduction to Chinese Civilization (1-1) F, W** Mr. Kent
Chinese Civilization from the beginnings to ca. 1900 A. D.; from 1900 to the present.
- *100C Introduction to Japanese Civilization (1) S** Mr. Kent
Japanese Civilization from mythological times to the present.
- 101A-B-C Literary Chinese (1-1-1) F, W, S** Mr. Kent
- *102 Japanese Literature in Translation (1)** Mrs. Ushioda
Readings in selected poetry, drama, and fiction from Nara times to the present.
- 103 Contemporary China (1) F** Mr. Kent
Developments in Chinese cultural life since 1911; thought, literature, politics, the arts.
- *104 Chinese Literature in Translation (1)** Mr. Kent

*Not offered 1970-71.

- The ancient "classics," poetry, the belletristic essay, criticism, the tale and the novel, from the earliest times to the present.
- 105 Chinese Thought (1) W** Mr. Kent
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)** Mr. Kent
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** Mr. Singh
The forces that shaped India; interdisciplinary survey of Indian history, philosophy, religion, and art.
- 108 Indian Classics (1) W** Mr. Singh
The Indian mind; classics of philosophy, aesthetics, and literature.
- 109 The Indian Image Abroad (1) S** Mr. Singh
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)** Mrs. Loh
May be repeated for credit.
- *111 Readings in Literary Chinese (1)** Mr. Kent
May be repeated for credit.
- 115 Modern Japanese Intellectuals and Writers (1) W** Mrs. Ushioda
Reading and analysis of modern Japanese critical and creative writers; seminar format, with each student pursuing an individual topic.
- 117 Philological Method (1) S** Mr. Kent
Analysis of the Chinese script; investigations into the meanings and phrases in premodern Chinese texts. Prerequisite: reading ability in literary Chinese.
- 199 Directed Reading (1) F, W, S** Staff
May be repeated for credit.

*Not offered 1970-71.

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 introduction to the Black Culture area he should complete Black Culture 107A-B and one course in creative or expository writing.

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 (Black Culture 102) and either Economics of Discrimination (Black Culture 101A-B) or Economics of Urban Problems (Black Culture 103A-B).

Courses in Black Culture

- 100A-B-C Contemporary Problems (1-1-1) F, W, S** Mr. Smith
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) F, W** Mr. Mbatia
Studies of occupational ceilings, job penetration, and other factors involving economic discrimination.
- 102 Statistics for Culture Study (1) F** Mr. Mbatia
A survey of the interpretation of statistical reports and other documents related to the analysis of culture.
- 103A-B Economics of Urban Problems (1-1) W, S** Mr. Mbatia
Analysis of problems of minorities in the city. This course will require field observation and analysis.
- 104A Selected Afro-American Literature (1) Summer** Mr. Jeffers
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.
- 104B A Seminar in Richard Wright (1) Summer** Mr. Jeffers
An intensive exploration of the work and spirit of Richard Wright. All important works will be read and discussed, in addition to biographical material.
- 105 The Image of the Black Man in American Films (1) W** Mr. Moss
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** Mr. Moss
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.
- *107A Black America I (1)**
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)**
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.
- 109 Introduction to Black Literature (1) F, W, S**
A basic survey of the traditions of Black writing in America. This is a reading course with an examination. May not be repeated for credit.

*Not offered 1970-71.

- 110 Race and Economics (1) Summer** Mr. Mbatia
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.
- 111 The Black Worker (1) Summer** Mr. Bell
An examination of the factors which have affected the occupational opportunities of Black workers since 1830. The course stresses the impact of immigration, labor unions, and public policy.
- 112 Black Psychology: A Psychological View of the Black Experience (1) F** Mr. White
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, S** Mr. White
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** Mr. White
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)**
Examination of the dynamics related to both psychological actualization and psychopathology. Course will also include an exploration of group processes, counseling, and psychotherapeutic models.

*Not offered 1970-71.

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 three of the 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 majoring in Chicano Culture will coordinate their upper-division course work with one of the faculty advisors in the Department. Because of our anticipation in the increase in classes in this particular culture, we have not set any rigid standard as to the courses that have to be taken to complete the requirements for the primary concentration in Chicano Culture.

Courses in Chicano Culture

Open to Lower-Division Students

- 100A Introduction to Chicano Culture (1) F** Mr. Alatorre
A study of the psychology, history, politics, background, and sociology of the modern Chicano.
- 100B Introduction to Chicano Culture (1) W** Mr. Alatorre
In-depth study of particular issues.
- 103 Introduction to Economics and Discrimination (1) F** Mr. Fernandez
Present economic problems of the Chicano population of the Southwest. Includes discussion of housing, employment, land tenure, migration, education, crime, delinquency, and consumer problems.
- 113 The Chicano: A Philosophical and Psychological Perspective (1) W** Mr. Sanchez
An attempt to understand the Chicano through various philosophical and psychological models with an emphasis on developing a cultural pluralistic outlook.

Open to Upper-Division Students

- 102 The Chicano and Civil Rights (1) W** Mr. Alatorre
The relationship of Civil Rights to the Chicano community.
- 104 Economics of Discrimination (1) W** Mr. Fernandez
Urban and rural economic analysis for the low-income Chicano, theoretical models of discrimination, macroeconomics and unemployment. Prerequisite: upper-division standing, or a solid background in economics.
- 106 Contemporary Chicano Problems: 1920-1969 (1) S** Mr. Alatorre
Studies in the sociology of the barrio and agricultural communities.
- 110 Institutional Racism and Its Effects on Chicanos (1) Summer** Mr. Alatorre
In response to the summer of 1967, which brought racial disorder to American cities, and with it shock, fear, and bewilderment to the nation, the National Advisory Commission on Civil Disorders was formed. The findings clearly indicated that a major part of the problem stemmed from "White Racism in America," manifested by the movement toward two societies, "one black, one white" — separate and unequal. No mention was made about the subtleties of discrimination and racism against Chicanos. It has been the belief of many Chicanos that the governmental, political, welfare, and academic institutions have been and continue to be racist in nature, by the perpetuation of their insensitive and indifferent attitudes. This has led to their inability to understand why Chicanos remain totally alienated from the mainstream of American life and society. The course will be geared to closely scrutinizing and understanding the term "institutional racism" and how it is manifested by the above institutions.
- 111 Approaches and Strategies for Teaching the Bilingual and Bicultural Child (1) Summer** Mr. Alatorre
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** Mr. Newcomb
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.
- 199 Directed Reading (1) F, W, S** Staff

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

- 1 Pre-Columbian Art and Architecture (1) F** Mr. Gendrop
Studies in pre-Columbian culture through artistic and architectural evidence. Given in English.
- 2 Philosophical Ideas of Latin America (1) W** Mr. Bondy
Same as Philosophy 183. Philosophical currents in Argentina, Mexico, and Peru from Positivism to the present.
- 3A Latin American History: Nineteenth-Century Latin American Dictators and Dictatorships (1) F** Mr. Woodbury
Same as History 151.
- 3B Latin American History: Contemporary Latin America (1) W** Mr. Woodbury
Same as History 152. Analysis of the revolutions in Mexico, Bolivia, and Cuba.
- 3C Latin American History: The Mexican (1) S** Mr. Woodbury
Same as History 153. A social and cultural history of the Mexican from pre-Columbian civilizations, through the confrontation of Indian and European and the Mexican Revolutions of 1810 and 1910 to questions of cultural identity and discrimination north and south of the Rio Grande.

The following courses are given in the Department of Spanish and Portuguese and may be counted toward a comparative group:

- 110A Pre-Columbian Cultures of Mexico (1) F**
110B Revolutionary Thought in Peru (1) W
110C Cuba: Culture and Economics (1) S
130A Spanish-American Prose Fiction: Nineteenth Century (1) F
130B Spanish-American Prose Fiction: 1910-45 (1) W
130C Spanish-American Prose Fiction: 1945- (1) S
233A-B River Plate Short Story I-II (1-1) F, W
234A-B-C Spanish-American Poetry I-II-III (1-1-1) F, W, 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.

Courses in Russian Culture

- 20A-B Russian Civilization (1-1) F, W** Mr. Grenewitz
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 of Russia.

- 150A Nineteenth-Century Russian Literature in Translation (1) F** Mr. Grenewitz
 Major Russian authors of the nineteenth century, treated in terms of special topics. May be repeated for credit with permission of instructor.
- 150B Twentieth-Century Russian Literature in Translation (1) W** Mr. Grenewitz
 Major Russian writers of the twentieth century.
- 150C Seminars in Special Topics in Russian Literature (1) S** Staff
 Topics will change from year to year. Work will be offered in translation.
- Additional courses in Russian Culture are contemplated for 1971-72, including Russian Intellectual History and Russia and China.

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.A., 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 22.

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 creative research and teaching

*A one-year course covering the topics in Kemeny, Mirkil, Snell, and Thompson, *Finite Mathematical Structures*, can be substituted for Mathematics 3A-B-C.

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

Julian Feldman, Ph.D. Carnegie Institute of Technology, *Assistant Chancellor for Computing, Professor of Psychology and Information and Computer Science, and Chairman of the Department 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*

Marsha A. Drapkin, B.S. Stanford University, *Acting Assistant Professor of Information and Computer Science*

David J. Farber, M.S. Stevens Institute of Technology, *Acting Associate Professor of Information and Computer Science*

Richard W. Hamming, Ph.D. University of Illinois, *Visiting Professor of Information and Computer Science*

Laurent Siklossy, Ph.D. Carnegie-Mellon University, *Assistant Professor of Information and Computer Science*

Jack Sklansky, Sc.D. Columbia University, *Professor of Electrical Engineering and Information and Computer Science*

Frederic M. Tonge, Ph.D. Carnegie Institute of Technology, *Professor of Administration 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, *Acting Dean for Graduate Division and Associate Professor of Population and Environmental Biology*

Michael E. Tarter, Ph.D. University of California, Los Angeles, *Associate Professor of Medicine and Mathematics*

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. No prerequisite.

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.

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-output 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)

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 community living, 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 Social Ecology curriculum provides the context for educating people needed for the various community-oriented programs. In addition, it is expected to become a means of preparing students for graduate work in such schools as the Graduate School of Administration and the College of Medicine, as well as for the more academic schools such as Biological Sciences and Social Sciences. It is, finally, 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 their ultimate career objectives.

The curriculum is oriented toward producing a coordination between on- and off-campus experience, of theoretical and applied learning, so that each enhances and enlarges the other. It enables 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 field assignments and their associated study programs; 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 schools, about one-third in courses, workshops, and both general and special seminars related to their community field assignments, and about one-third in independent study. The Social Ecology Program will offer 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.

No students are accepted for Social Ecology prior to their sophomore year. During the freshman year at UCI (or elsewhere) students may enroll in any of the other curricula on the campus, whether in one of the schools or otherwise. Particularly appropriate for students who expect to enroll in Social Ecology during their sophomore year is freshman course work in University Studies.

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.

Requirements for the Bachelor's Degree

University requirements: See page 22.

Departmental Requirements

Social Ecology 100A-B-C during sophomore year; field study during each quarter of junior and senior years (one course credit per quarter).

Undergraduate Program

During their first year in Social Ecology all students participate in the General Seminar (Social Ecology 100A-B-C). Problems appropriate to Social Ecology are explored by discussions of the urban crisis, community health and resources, criminal justice, and educational planning, and relating these to the concepts and theories of the classical literature. 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.

Students visit and/or investigate various possible field assignments concurrently with the General Seminar and select one or more for further concentrated study. Once selections are made, students meet in small workshops both to get more specific information and skills and to work out their future curricula and content of courses.

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.

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. They, where appropriate, 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; Welfare Rights Organization; Orange County Criminal Justice Council; Child Guidance Center of Orange County; Orange County Medical Center; Fairview State Hospital; San Joaquin School District.

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 problems of poverty. Let us suppose he majored in the School of Biological Sciences during his freshman year and transferred to the Program in Social Ecology at the beginning of his sophomore year.

	FALL	WINTER	SPRING
FRESHMAN	Chem. 1A Math. 5A Univ. Studies I Soc. Sci. 10R	Chem. 1B Math. 5B Univ. Studies II Soc. Sci. 10G	Chem. 1C Math. 5C Univ. Studies III Soc. Sci. 10X
SOPHOMORE	Soc. Ecology 100A Bio. Sci. 100A Spanish 1A Soc. Ecology 135	Soc. Ecology 100B Bio. Sci. 100B Spanish 1B Soc. Ecology 143	Soc. Ecology 100C Bio. Sci. 100C Spanish 1C Soc. Ecology 133
JUNIOR	Spanish 2A Chicano Culture** Field Assignment* Soc. Ecology 199	Spanish 2B Black Culture** Field Assignment* Soc. Ecology 199	Spanish 2C Soc. Ecology 112 Field Assignment* Soc. Ecology 199
SENIOR	Spanish 10A Soc. Sci. G, H, or J Field Assignment* Soc. Ecology 199	Spanish 10B Soc. Sci. G, H, or J Field Assignment* Soc. Ecology 199	Spanish 10C Soc. Sci. X, Y, or Z Field Assignment* Soc. Ecology 199

*In the curriculum of the Program in Social Ecology.

**In the curriculum of the Program in Comparative Culture

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*
- Robert E. Bickner, B.A. University of Florida, *Research Economist, Public Policy Research Organization, and Lecturer in Social Ecology*
- Virginia Burrs, Ph.D. Indiana University, *Lecturer in 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*
- 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*
- Jack F. Little, Ph.D. University of Southern California, *Staff Officer, Innovation in Student Life, and Lecturer in Social Ecology*

Frederick L. McGuire, Ph.D. New York University, *Associate Professor in Residence, Psychiatry and Human Behavior*

Alexander Mood, Ph.D. Princeton University, *Professor of Administration, Director of the Public Policy Research Organization*

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, *Lecturer in Social Ecology*

Undergraduate Courses in Social Ecology

100A-B-C General Seminar (1-1-1) F, W, S

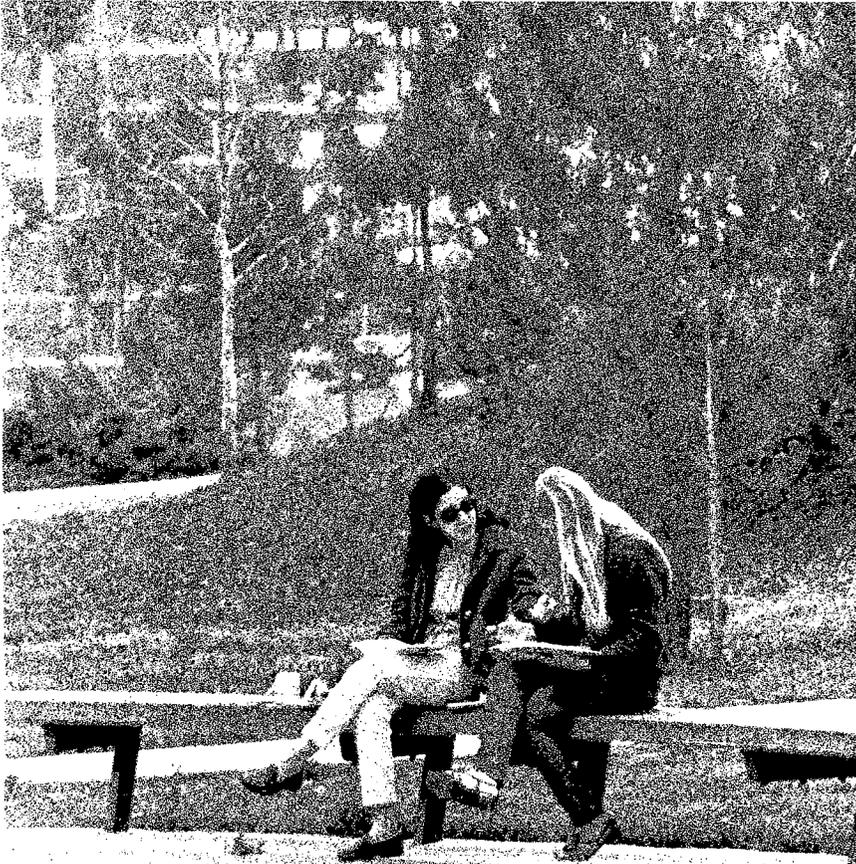
Mr. Binder

An introduction to community problems by discussions of the urban crisis, community health, physical and social resources, criminal justice, and educational planning. In addition to faculty participation conducted in proseminar fashion, resource professionals from the community will present relevant material and lead discussions.

103 The Social Implications of Computing (1) F, W, S

Mr. Gordon

Just as the invention of the steam engine (i.e., machinery to amplify man's physical powers) has wrought awesome changes in man's environment, so the invention and use of the digital computer (i.e., machinery to amplify man's intellectual powers) promise changes of profound consequence: for example, what do we need to learn, the nature of work and compensation for it, alterations in the form of government, personal freedom and privacy. In this course, we shall come to know what attributes of the computer give it its awesome potential; with



this knowledge as a tool, we will explore several kinds of social activities to determine how they might change or be changed as a basis for making decisions about the necessity or desirability of such change. This is not a computing course or a course about computing. However, a practical knowledge of computing, the kind that comes from having used a computer, equivalent, say, to that obtained from successful completion of Information and Computer Science 1, would be helpful. Otherwise, there are no prerequisites.

105 Science and Ethics (1) W

Mr. Degerman

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

Mr. Bickner

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 science; 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.

110A-B Communication of Problems in Ecology (1-1) W, S

Mr. Binder

The emphasis will be placed on the ineffectiveness of the present forms of media in presenting information capable of stimulating the public to action in the area of ecology. The goal of the course is not only to explore present methods, but to determine methods that will more effectively communicate to the public ecological problems.

112 The Role of Mass Media of Communication in Society (1) F, S

Mr. Desenberg

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.

115 Survey of Clinical Psychology (1) F

Miss Burrs

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. Prerequisites: Abnormal Psychology; Behavior Disorders; Personality Theory; or consent of instructor.

120 Methods of Behavioral Modification (1) W

Mrs. Whalen

A series of presentations of ongoing programs using behavioral 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.

125A-B Methods of Counseling (1-1) F, W

Mr. Little

Exploration of methods and techniques of counseling. Concentrated and in-depth study will be provided by visiting lecturers, discussions, reading, and field experience.

127 Disorders of Behavior (1) S

Mr. McGuire

This course surveys the field of behavior disorders existing in the United States. It describes the various methods society has developed for dealing with behavior disorders, and the scientific, economic, social, and political problems which are involved. Field experience will take place in state and county hospitals, out-patient clinics, and other public agencies. Because this course emphasizes social ecology and community action, students will be subjected to a number of "controversial" issues in this field.

- 132 Effects of Air Environment-(1) S** Mr. Russell
 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.
- 133 Ecological Concepts (1) S**
 Same as Biological Sciences 11. This course will consist of two lectures and one discussion section per week. The lectures will cover the fundamental concepts of ecology including: niche, habitat, population, community, ecosystem, biogeochemical cycles, energy transfer, succession, and eutrophication and productivity. Interdependence among individual populations and their physical environment will be stressed. The effects of man within an ecosystem will be emphasized particularly during the discussion section.
- 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) W** Mr. Ahumada
 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 Public Policy in Action (1) W** Mr. Fagin
 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.
- 199 Individual Study**

Field Assignments

- 119 Field Assignment in Social Environment (1) F, W, S**
 Communication, alienation, family, institutional structure.
- 129 Field Assignment in Counseling and Behavior Modification (1) F, W, S**
- 139 Field Assignment in Physical Environment (1) F, W, S**
 Water, food, air, conservation, accident prevention, biometeorology.
- 149 Field Assignment in Urban Crises (1) F, W, S**
 Minority problems, poverty, community development, organizational approaches.
- 159 Field Assignment in Health and Leisure (1) F, W, S**
 Drugs, nutrition, child care, health systems, arts, skills, value of leisure vs. work.
- 169 Field Assignment in Special Minorities (1) F, W, S**
 Youth, handicapped, gifted, single-parent families, single adults.
- 179 Field Assignment in Criminal Justice (1) F, W, S**
- 189 Field Assignment in Educational Policy and Institutions (1) F, W, S**



SEPARATE PROGRAMS

The following two programs do not offer degrees, but their courses are open to students in any major at UCI. The University Studies courses are limited, however, to freshmen; they may be used to help fulfill the UCI breadth requirement as described on page 22.

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.

The Program courses are described in the Irvine course schedule as "University Studies I, II, and III." Courses offered under this title are open as electives to all freshmen. They are also open to sophomores who begin the sequence in their freshman year. University Studies courses may be used to fulfill part of the University breadth requirement (see page 22). This requirement is stated in the catalogue as follows: Students must take six courses in one school outside the major school and three courses in each of two other schools outside the major school. A student who completes the interdisciplinary courses University Studies I, II, III must take three courses in each of three schools outside the school of his major.

No student may receive credit for more than three University Studies courses during his undergraduate career. No more than one University Studies course may be taken during a given quarter.

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*

- Kenneth W. Ford, Ph.D. Princeton University, *Professor of Physics* (on leave 1970-71)
 Ralph W. Gerard, M.D. Rush Medical, Ph.D. University of Chicago, *Professor Emeritus of Biological Sciences*
 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*
 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 I (Fall)

- Section 1. The Beast in Man (1)** Mr. McGaugh
 Poets, theologians, or scientists have insisted that man is in some fundamental ways different from the other animals. But how does man differ? What is the nature of human nature? Instructor's field: Psychobiology.
- Section 2. The Impulse to Create (1)** Mr. Fridhandler
 A consideration of the sources of creativity in arts and science. Sources will include Martin Grotjahn's "Beyond Laughter," J. Bronowski's "Science and Human Values," Erich Fromm's "The Heart of Man," and C. Chaplin's "City Lights." Instructor's field: College of Medicine-Biochemistry.
- Section 3. On the Accountability of the Organization Man (1)** Mr. Schinzinger
 To what extent is the individual organization man legally and morally responsible for the harmful results (faulty design, pollution, etc.) of the production process? Instructor's field: Electrical Engineering.
- Section 4. Why Police? (1)** Mr. Arthur
 The concept of "law and order," discussed by professionals from the fields of sociology, criminology, and law enforcement agencies. Readings will include The President's Crime Commission Report; Conrad's "Crime and its Correction;" Fleming and Hunt's "Criminal Law Manual." Instructor's field: Aerospace Engineering.
- Section 5. Opera as Theatre (1)** Mr. Holmes
 Opera and dramatic music as reflections of theatrical fashion in the 17th and 18th Centuries. Works studied will include Handel's *Alcina* and Mozart's *Nozze di Figaro*. Readings will include selections from Monteverdi's *Il pastor fido* and from the Dryden-Davenant *Tempest*. Instructor's field: Music.
- Section 6. Science and the Military (1)** Mr. Shaw
 An inquiry into scientific and political aspects of sophisticated weapons systems such as the anti-ballistic missile and the multiple independent re-entry vehicle. Instructor's field: Physics.
- Section 7. Cardinal Newman's "The Idea of a University" (1)** Mr. Brittan
 A study of the aims and purposes of "liberal" education, through an examination of Cardinal Newman's *The Idea of A University*. Instructor's field: Philosophy.
- Section 8. Psychodrama (1)** Mr. Noble
 Role playing will be introduced to students. Techniques of soliloquy, self-presentation, self-realization, role-reversal, mirror and double techniques will be presented. Instructor's field: Psychiatry and Human Behavior.

University Studies II (Winter)

- Section 1. Science, Science Fiction, and the Future (1)** Mr. Bork
Learning about science through science fiction. Readings will include selections from the works of Arthur C. Clarke, Fred Hoyle, C. P. Snow, and Kurt Vonnegut. Not open to students majoring in science or engineering. Instructor's fields: Physics, Information and Computer Science.
- Section 2. Hope and Imagination (1)** Mr. Wlecke
This course will be concerned with the relationship between the act of hope and the structures of the imagination. This relationship will be examined from psychological, social, philosophical, and literary points of view. Readings will be from William F. Lynch's *Images of Hope* and from the works of Marcel, Camus, Wordsworth, and Emerson. Instructor's field: English.
- Section 3. Origins and Archetypes (1)** Mr. Kent
This course will deal with those things which seem to matter most to every man and woman, e.g., birth and death, the differences between male and female, the self vs. the not-self, change, etc. Readings will be from Eliade, N. O. Brown, Bettelheim, Moses, and the Buddha. Instructor's field: Comparative Culture.
- Section 4. Utopias: Classical and Contemporary (1)** Mr. Santas
A discussion of ideal societies, social satires, and negative utopias in philosophy and literature. Readings will include Plato's *Republic*, Thomas More's *Utopia*, Aldous Huxley's *Brave New World*, George Orwell's *1984*, B.F. Skinner's *Walden Two*. Instructor's field: Philosophy.
- Section 5. Rainbows and Things (1)** Mr. Reines
A variety of natural phenomena, some common, some less obvious, which have intrigued man for centuries, will be discussed. Among the subjects: rainbows, the setting sun, the planets and the nucleus. Instructor's field: Physics.
- Section 6. Life (1)** Mr. Dennett
A critical examination of the concept of life. Is our reverence for life a coherent attitude? Can we uncover a concept of life that unifies and justifies the attitudes and practices we accept today? Instructor's field: Philosophy.
- Section 7. Social Change and the University (1)** Mr. Hoy
An assessment of periods of social activism from 1917 to 1970, and their effects on American colleges and universities. Instructor's field: Graduate School of Administration.
- Section 8. Power Relationships in the Urban Community (1)** Mr. Baisden
This course will use Orange County as a case study in considering which individuals and groups in a metropolitan area have the ability to make major decisions and to have them carried out. Is power concentrated or diffused? Is there an Establishment? Instructor's field: University Extension and Summer Session.

University Studies III (Spring)

- Section 1. The Cold War and the University of California (1)** Mr. Hufbauer and Mr. Reiter
An inquiry into the background of the Cold War, and the involvement, pro and con, of UC scientists and faculty. Instructors' fields: History and Physics.
- Section 2. The Man-Made World (1)** Mr. Saunders
In the transition from the natural to the man-made world, man has developed a number of specialized "engineering concepts" such as feedback, stability, reliability, and maintainability. We will examine the impact of these concepts on the sociological, humanistic, and artistic endeavors of our society. Not for engineering or science majors. Instructor's field: Engineering.
- Section 3. Fascism (1)** Mr. Fiedler
A study of fascism, fascist regimes, and their relationship to contemporary political systems. Readings will range from Barrington Moore's *Social Origins of Dictatorship and Democracy* and Ernst Nolte's *Three Faces of Fascism* to literary works by George Orwell, Christopher Isherwood, and Günther Grass. Instructor's fields: German and Russian.

Section 4. New Orleans Jazz (1)

Mr. Bell

The course will trace the history of New Orleans jazz, convey a notion of the culture in which musicians have lived, and assess the impact of their efforts. Not for music majors. Instructor's field: Graduate School of Administration.

Section 5. Behavior Under Stress (1)

Mr. Russell

A study of social, psychological, and physiological disorganization resulting from stress. "Diseases of adaptation" as evidenced from the test tube to People's Park. Instructor's field: Psychobiology.

Section 6. Why Police? (1)

Mr. Arthur

The concept of "law and order," discussed by professionals from the fields of sociology, criminology, and law enforcement agencies. Readings will include The President's Crime Commission Report; Conrad's "Crime and Its Correction;" Fleming and Hunt's "Criminal Law Manual." Instructor's field: Aerospace Engineering.

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*

Robert H. Benson, B.A. California State College at Fullerton, *Sports Information Director*

Robert G. Ernst, B.A. University of California, Irvine, *Junior Supervisor 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*

Myron C. McNamara, B.A. University of Southern California, *Lecturer in Physical Education*

Edward H. Newland, B.A. Occidental College, *Lecturer in Physical Education*

Richard B. Sweet, B.A. University of California, Santa Barbara, *Junior Supervisor in Physical Education*

Timothy M. Tift, M.A. Pepperdine College, *Lecturer in Physical Education*

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, body building, fencing, folk dancing, gymnastics, golf, handball, judo, life saving, scuba diving, squash racquets, swimming, tennis, volleyball, water polo, water safety instruction, individual exercise for women, equitation and horsemanship, sailing, and weight training.



GRADUATE EDUCATION

GRADUATE DIVISION

Keith E. Justice
Dean

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 judgement, synthetic understanding, and imaginative creativity. The dissertation is expected to demonstrate such abilities. Other Doctor's Degrees, marking professional attainment, and with correspondingly different emphasis, are also being offered. The M.D. is offered through the California College of Medicine, now part of the Irvine Campus.

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.



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.

Owing to the unusual nature of the initial mission of the Graduate School of Administration and to the relatively small faculty which is anticipated during the early years, *it will not be possible to admit part-time degree candidates*. The integrated course program for the first year of the M.S. candidate makes it highly unlikely that an adequate education could be obtained on the course-by-course basis possible in other institutions. A full-time student is one who is *not* carrying a regular full-time job off campus and who enrolls for *not less* than three courses per quarter (or their course equivalent).

Continuing Education

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 the beginning of the fall quarter of their first year in residence. (Students with major deficiencies in these entrance requirements could be admitted for a period of one year as "Limited Status" students in order to devote full time to making up these deficiencies in appropriate undergraduate courses on campus. Those anticipating enrolling as Limited Status students should apply for admission to the Undergraduate Admissions Office. Subsequent admission to the graduate programs in the Graduate School of Administration would be dependent upon the quality of work undertaken as a Limited Status student).

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.

Degree Programs

For the most part, degree requirements are stated in terms of meeting desired educational outcomes rather than in terms of a number of courses or credit hours. At the beginning of the first year of study, a systematic appraisal of the candidate's current level of preparation in core disciplines and techniques will be undertaken as a guide for future decisions. At any time, the student may be exempted from required portions of his program by examination or other forms of certification.

Educational Objectives

In this age of major social change and expansion of knowledge, no formal educational program can hope to do more than (a) provide as thorough a grounding as possible in what appear to be enduring intellectual requirements, and (b) encourage and help the future leader to become a continuing learner. Hence a major objective is to bring formal learning into line with the reality of rapid changes in the state of knowledge. Heavy emphasis must be placed on the development of the individual's capacity for acquiring, using, and evaluating the knowledge necessary for, and related directly to, the making and implementing of organizational decisions.

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 techniques; 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 will be stressed: 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

This program of study will normally take two full academic years, including, for most 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 the areas of 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 expected of M.S. candidates that they will engage in teaching experiences during some portion of their two-year program.

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, for example, School of Social Sciences, the School of Engineering, or the Department of Information and Computer Science. 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. Suc-

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 Bachelor'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. Beyond the extensive preparation in core disciplines and areas of technical competence acquired in the Graduate School of Administration M.S. program (or satisfactorily equivalent preparation), 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. Admission to candidacy for the Ph.D. will be on the basis of a qualifying examination, normally not to be taken before the end of two years of full-time study.

Planning a Program of Study (M.S. and Ph.D.)

First Year

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:

210 A-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*

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*

Robert M. Gordon, M.A. Yale University, *Lecturer in Administration and Information and Computer Science*

John Hoy, M.A. New York University, *Senior Lecturer in Administration and Vice Chancellor — Student Affairs*

Arthur H. Kuriloff, B.S. University of California, Berkeley, *Lecturer in Administration*

Albert H. Rubenstein, Ph.D. Columbia University, *Visiting Professor of Administration 1970-71*

Victor H. Vroom, Ph.D. University of Michigan, *Visiting Professor of Administration 1970-71*

Courses in Graduate School of Administration

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.

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. 22). 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

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 or 172 during the junior or senior years, plus an English composition course more advanced than freshman English.

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 fifth year of college work taken in the Graduate Division is required for any teaching credential. 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. During the graduate year the student must complete for the Secondary Credential at least three courses in his major (or in his minor, if he has one). 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.

A student 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.

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 recommended.
 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 173;
 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 173;
 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. 36 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 science 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.

*Secondary Credential candidates in history, social sciences, and biological sciences may have difficulty securing a teaching position if they do not have a minor field.

**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.)

C. Major: Non-academic subject commonly taught in public schools.

Minor: Must be 1. A single academic subject** (30 quarter hours, including 20 quarter hours at the upper-division or graduate level), *or*

2. 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.

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 (Elementary)*

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*

Robert E. Letro, M.A. California State College at Long Beach, *Supervisor of Teacher Education (History and Social Science, Media)*

Jack R. McCullough, M.A. Pennsylvania State University, *Supervisor of Teacher Education (Music; Elementary)*

Paul A. Riffel, M.A. Notre Dame, *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 or 172 should normally be the first education course in which the student enrolls.

100 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-cultural is 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 primarily in Santa Ana.

**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.)

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)

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.

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 art and crafts programs. Works on developing skills appropriate to the high school student. Includes art in the humanities program.

104A-B Elementary School Curriculum, Organization and Methods (1-1)

104A 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: reading, language, literature, social science, mathematics, science, health, art, music, and physical education. 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. In the first quarter there will be detailed laboratory study of methods in developmental reading, language arts, and social science.

104B A laboratory course giving an intensive treatment of methods and materials of instruction in public elementary schools; review of context of the mandated subjects; classroom organization and management; classroom control and evaluation. This course also includes educational media in terms of equipment, materials, and techniques. Students are required to observe and participate a minimum of two hours per week in selected public elementary schools. In the second quarter of this course there will be detailed laboratory study of arithmetic, science, and a modern foreign language.

105A Curriculum and Methods in the Elementary School: Reading (1)

Principles and methods of developing instructional programs in reading: participation in schools.

105B 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.

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.

170 History and Philosophy of Education (1)

Course covers the development of educational thought with special reference to philosophical analysis.

171 Psychological Foundations of Education (1)

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)

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 of 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

Mr. Sircello

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. Days and time to be arranged.

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. The course becomes a convenient vehicle for an exchange by students and field teachers for teaching ideas, innovations, and educational media. Included will be the development and empirical try-out of short programs, utilizing data on responses of typical learners. This course is formulated so that students will be able to locate, design, and use media for the presentation of content. It will help students to arrive at a rationale for using a variety of media in the presentation of information, and the role of media in any particular content area. A prime consideration is to be able to use media in the context of teaching strategies and improved learning climates. The course will be held in a self-contained complex, including a learning resource center and a production laboratory wherein the students create their own materials. Mediated situations provide content for analytic discussion on student-teacher behavior and performance at a level of precision and activity which has never before been possible.

199 Individual Study: History and Philosophy (1)

Prerequisite: consent of instructor. Days and time to be arranged.

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.

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.



UCI-CALIFORNIA COLLEGE OF MEDICINE

Warren L. Bostick, M.D.

Dean

UCI-California College of Medicine is accredited by the Council on Medical Education and Hospitals of the American Medical Association and by the Association of American Medical Colleges and offers a four-year professional curriculum leading to the M.D. degree.

The College's preclinical instruction is conducted in new facilities at the UCI campus, which include the administrative offices, departmental and curricular offices and laboratories, medical students' multidiscipline laboratories, and academic support units such as the health sciences library, medical computer facility, vivarium, and office of medical education.

Initial planning funds have been received for the first major building, Medical Sciences Unit I, a \$28 million Sciences Basic to Medicine facility to be occupied in 1974.

This is to be followed by the development of the first increment of the University Hospital. Thereafter, a Clinical Sciences building will be erected to complete the basic requirements for the medical education program and form the nucleus of the 150-acre health sciences complex at UC Irvine.

Clinical Facilities

Clinical instruction is conducted at several affiliated hospitals, pending construction of the 350-bed first increment of the University Hospital on the UCI campus.

The Orange County Medical Center, a 634-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 Veteran's Administration Hospital in Long Beach provides 1,675 teaching beds with training emphases in both medicine and surgery.

Memorial Hospital of Long Beach, a non-profit community hospital with 545 beds, is a major teaching facility for medicine and pediatrics.

Other hospitals utilized by individual departments to extend the clinical and research training include Children's Hospital of Orange County, the Orange County Rehabilitation Center, Metropolitan State Hospital, U.S. Naval Hospital in Long Beach, and Fairview State Hospital.

Doctor of Medicine Curricula

In July 1970, a new medical curriculum was instituted. In a radical departure from the traditional structure of medical school courses, the new curriculum features a close correlation between the basic science and clinical disciplines. The first year of study consists of four quarters in which the primary emphasis will be on the sciences basic to medicine, illustrated and extended by clinical correlations whenever applicable. Emphasis the second year will be on a clinical core, 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 clerical clerkship opportunities, and depth elective studies leading to ultimate specialization.

The course plan will be flexible enough to allow talented students to complete requirements for the M.D. degree in three years instead of four, and will also permit certain students to study concurrently for both M.D. and Ph.D. degrees.

Details on admission requirements and procedures are included in the section on Graduate Admissions, page 57.

Information regarding such items as medical student registration, fees and financial aid, examinations, scholarships, advancement in course, requirements for graduation, leave of absence, withdrawal, dismissal, internships, licensure, and other regulations are published in the 1970-71 Announcement of the UCI-California College of Medicine. Course listings and programs of study in the College of Medicine are also included in this publication. Students interested in attending the College of Medicine should obtain this publication from the University of California, College of Medicine, Medical Student Services Office, Irvine, California 92664.



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Budget and Analysis Officer

John F. McGervey

Director of Physical Planning and Development

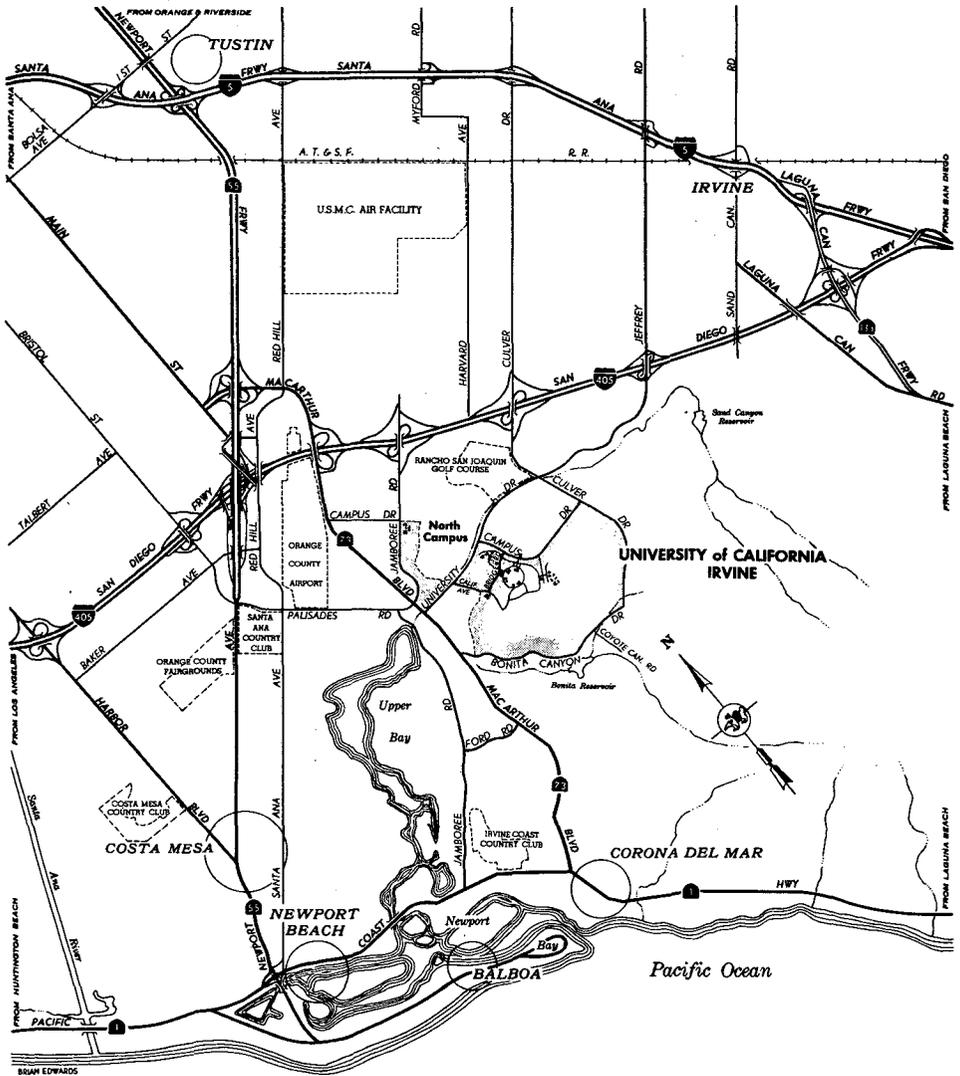
Clifton C. Miller

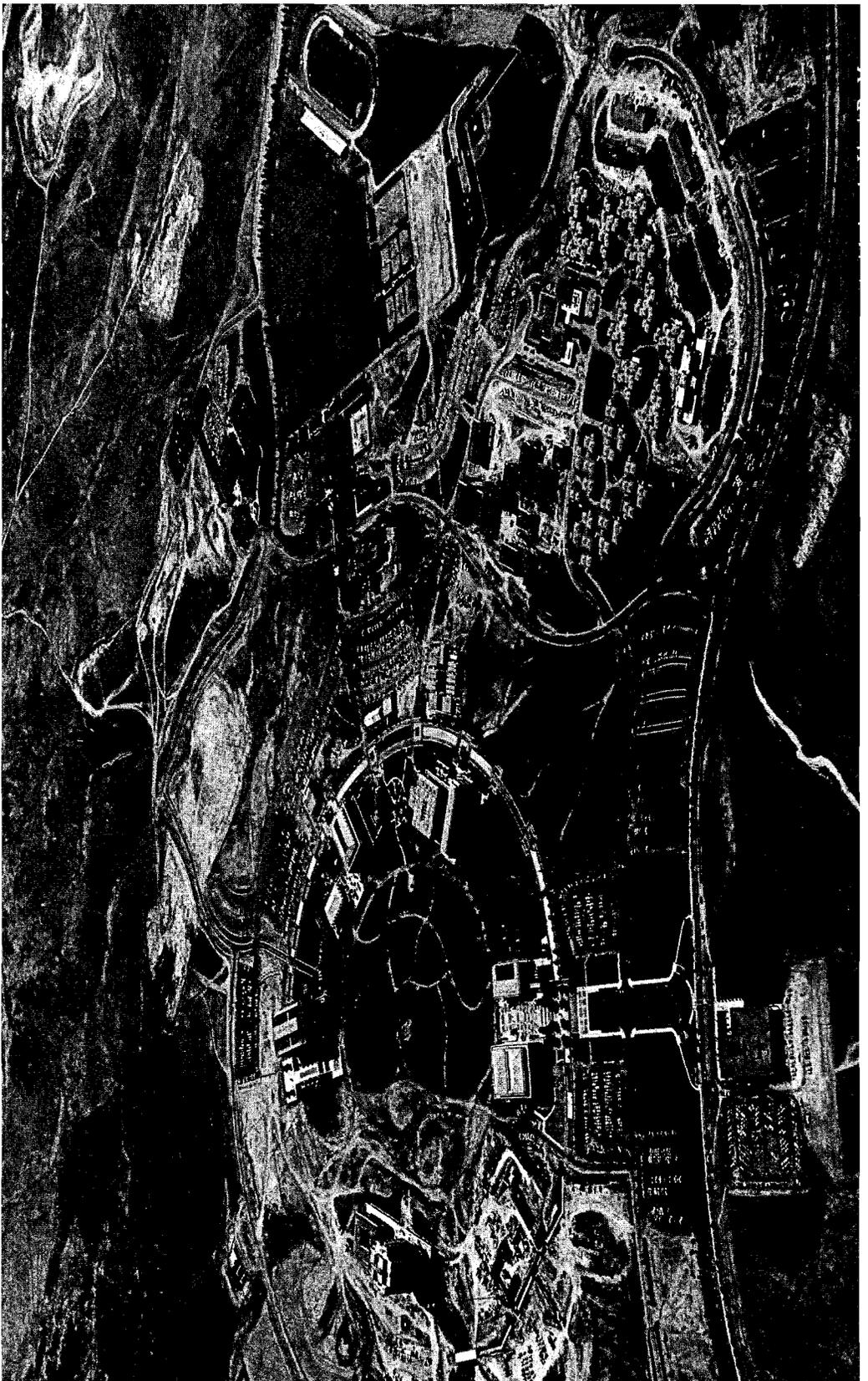
Physical Plant Administrator

C. O. Reinhardt

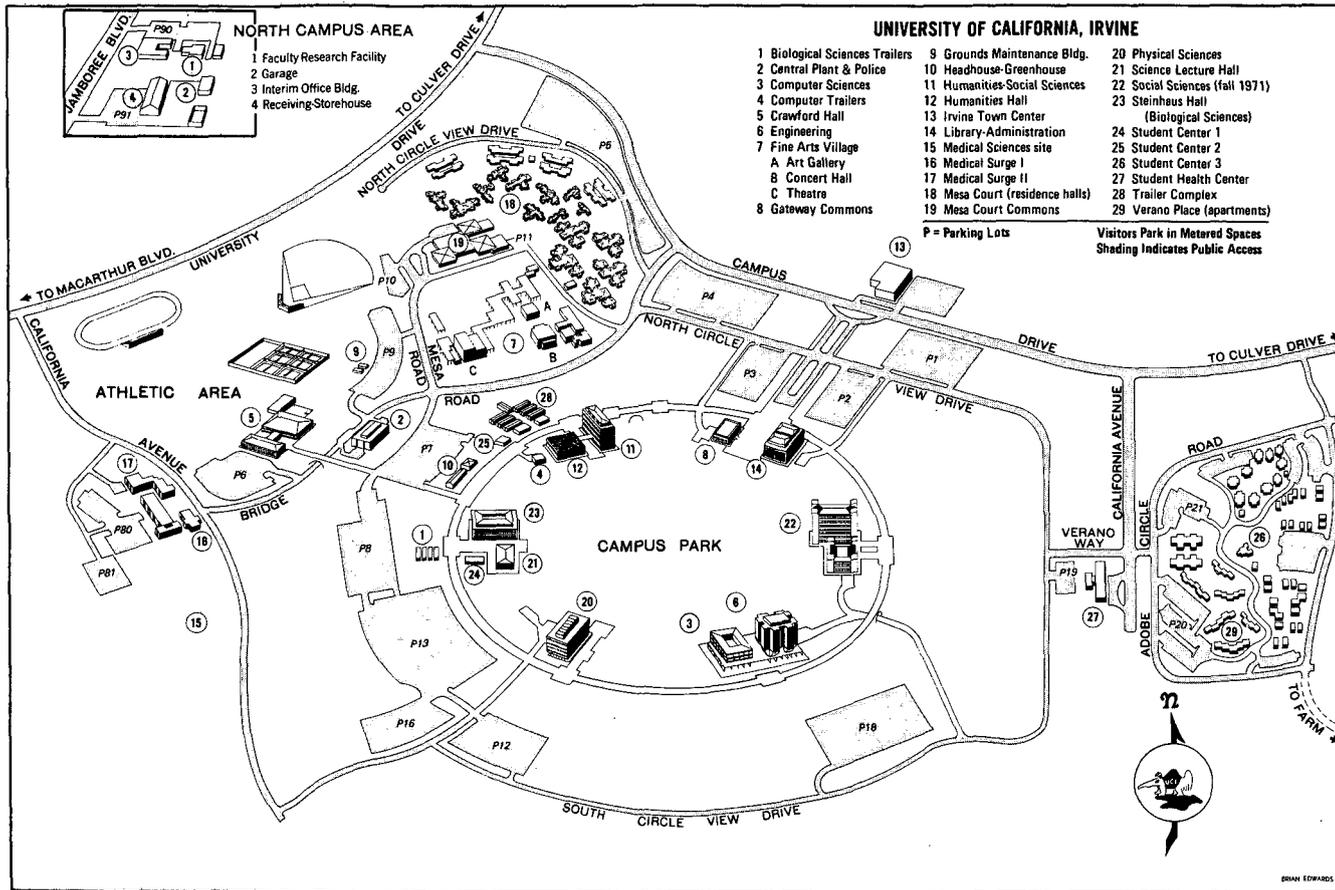
Dean of University Extension

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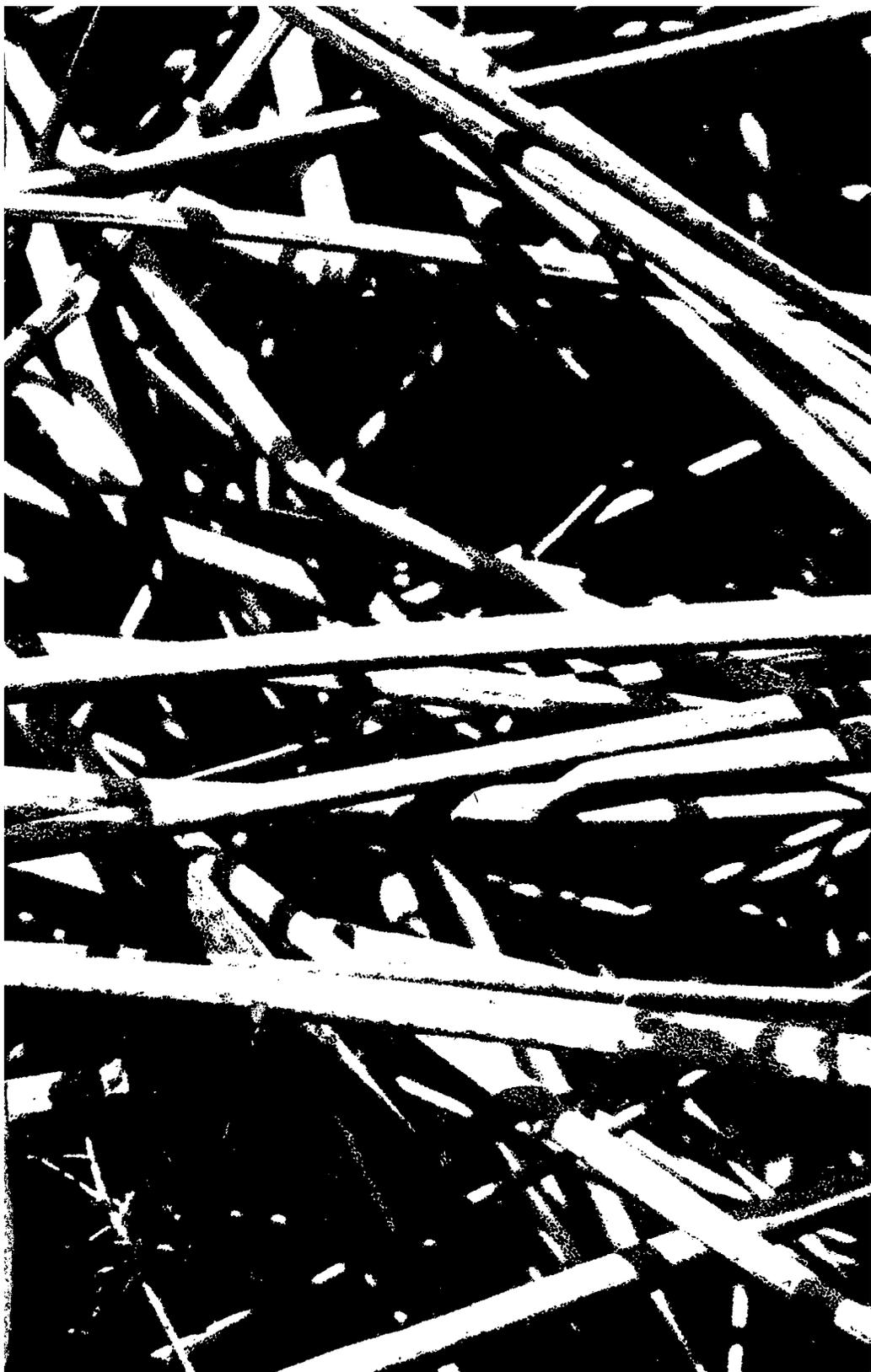
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UC IRVINE - 1970-1971

Design—Kathy Pearse
Photography—Mike Jones

