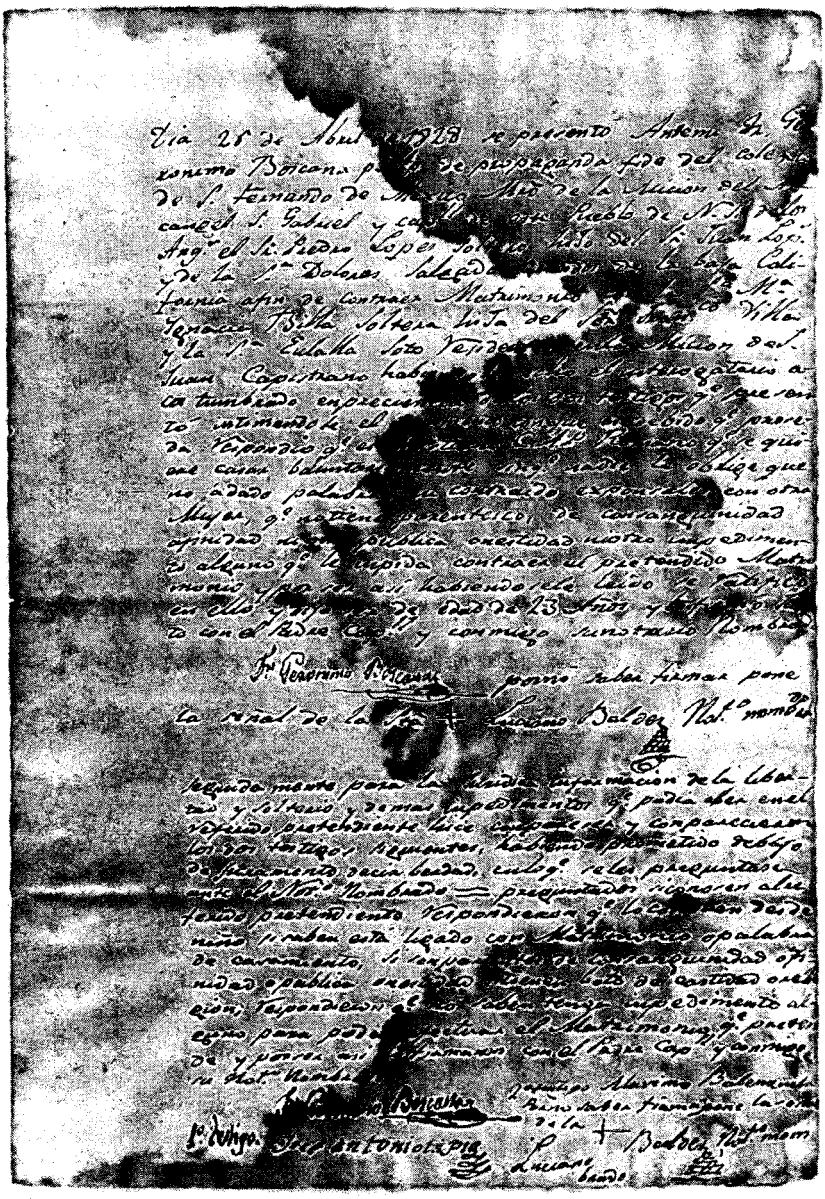
GENERAL CATALOGUE

UCI 1972-73

UNIVERSITY OF CALIFORNIA, IRVINE



Cover: From the cover of a 1926 pamphlet extolling the virtues of Orange County.

Front paper: From an original marriage document prepared by Fray Geronimo Boscana in 1828, part of the Meadows Collection of historical materials now in the UCI Library. Fray Boscana served at the San Juan Capistrano Mission from 1814 until 1826 and is the author of *Chinigchinich,* an account of the religion of the Indians in the San Juan Capistrano area.

Facing page: This very rare old ribbon, part of the Meadows Collection acquired by the UCI Library, commemorates the first reunion of a group of Confederate veterans.

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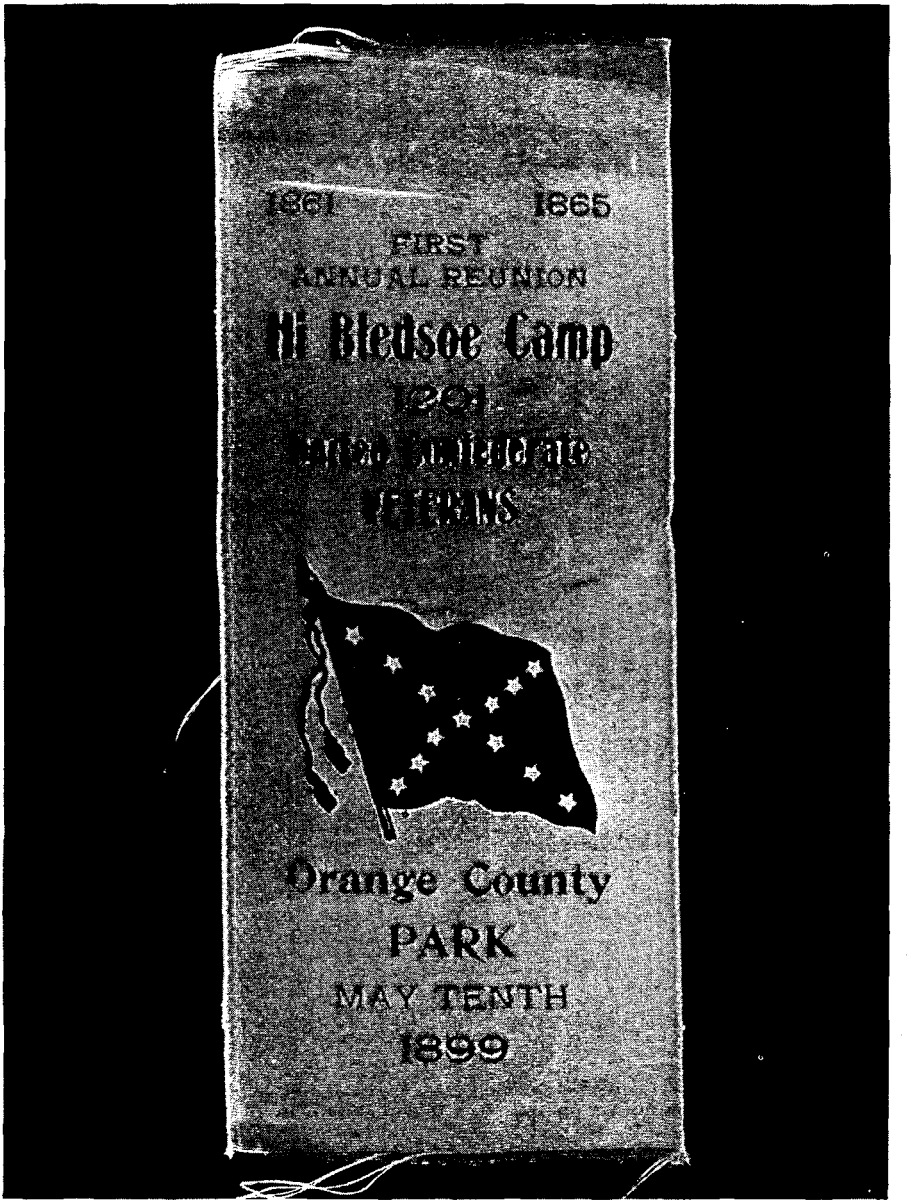


UCI 1972-73/GENERAL CATALOGUE UNIVERSITY OF CALIFORNIA, IRVINE

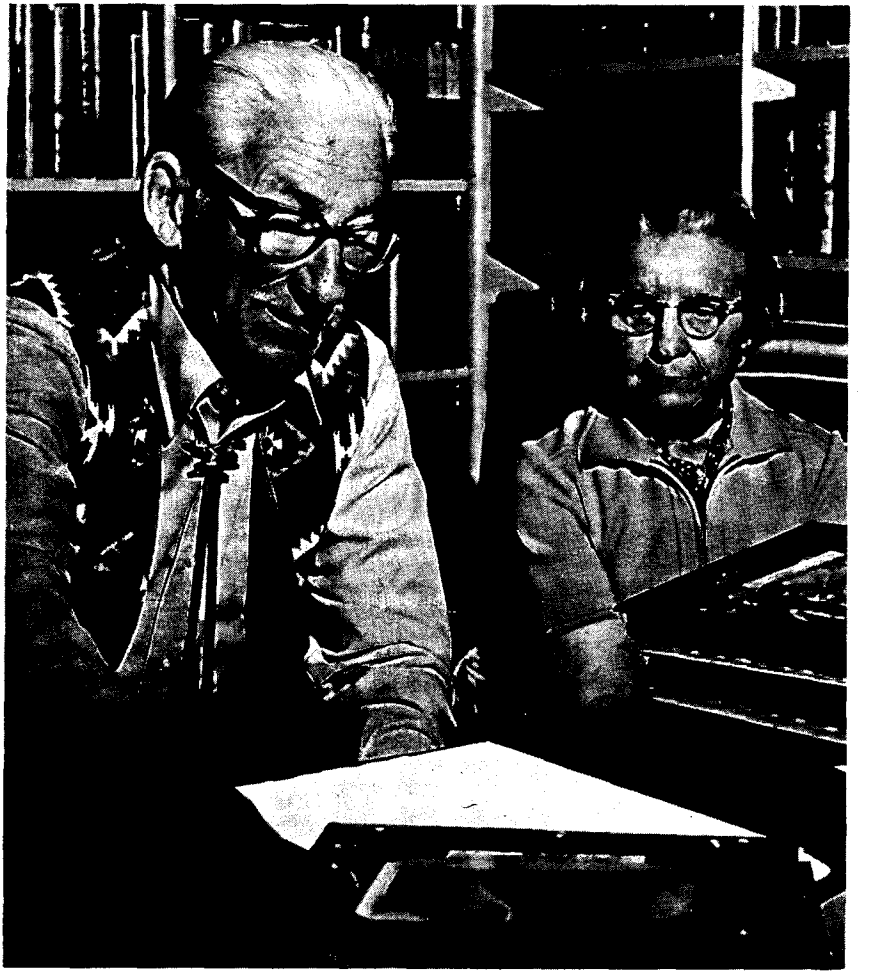
"It is obvious that the landscape of Orange County is changing rapidly. With increasing speed the old face of the land is taking on a new look. Within a lifetime the Orange County scene has changed from a quiet countryside to a bustling complex of communities. Only fifty years ago there was much that fused with the early days of Spain and Mexico. The music of the Spanish language was an overtone in daily conversation. The highways were dusty roads, cities were little more than villages, much of the land was undisturbed by cultivation, the air was brilliant or was washed by clean, white fog. The mountains were not scarred by roads nor fire-breaks, and canyons were filled with wild grapes and alder trees growing along rocky streams that seemed to flow indefinitely. But now the language is a patter of American English, the roads are swathed in concrete, the roofs of cities almost touch each other, the mountains are cross-hatched with access roads, the canyons are paved streets, and rainfall is channeled into cement ditches. The old Paisano does not weep over the changing landscape, but nostalgia does give it a golden aura.

"Every day new Paisanos are coming to Orange County. In the old days before the American flag waved over California, people who migrated to the country for new opportunities and a good way of living were called *Paisanos* in contrast to the *Militarios* who came on indefinite tours of duty. The Paisano built his home, raised his family, and influenced the destiny of the land. As families grew and new generations changed the landscape, a deep understanding and love of country developed. With a knowledge of the past, a happiness in the present, and a confidence in the future, the Paisano found life a satisfying experience. For the new Paisano the days of the past are recorded, the present is illuminated, and the future will develop from aspirations and dreams."

— Don Meadows, *Orange County under Spain, Mexico and the United States* (separately published from The Historical Volume & Reference Works by Dawson's Book Shop, Los Angeles, 1966), p. 25.

Don Meadows is a prominent Orange County historian and author. Over the years he has amassed one of the finest private collections of historical materials on Southern California and on Baja California in existence. This collection contains over 3500 volumes, some of them rare and valuable titles from the 18th and 19th centuries, manuscripts, maps, newspapers and periodicals, photographs, and many thousands of pieces of printed ephemera — pamphlets, brochures, programs, clippings — yesteryear's throwaways of every kind. The UCI Library recently purchased the Meadows Collection, considerably strengthening its position as a major resource for local and regional historical research.

UCI came to Orange County ten years ago. Since that time it has made a significant impression on the character of the area, both physically and intellectually, and it will continue to play a major role in shaping the future of the County. As we plan for the future, it is fitting that we take the time to understand the roots of our community. To help in this understanding, we have illustrated this issue of the UCI General Catalogue with certain materials from



Don Meadows and his wife Frances in their library. Photo Mike Jones

the Meadows Collection which specifically relate to the history of Orange County. We have made no attempt to be comprehensive or even chronological; rather, we have selected vignettes which we found particularly intriguing or which seemed to reflect the special character of this part of California.

Two people have been invaluable in the preparation of this illustrative material: Roger Berry, UCI special collections librarian and curator of the Meadows Collection, and Don Meadows, to whom the catalogue is dedicated. We wish to thank them both for their enthusiastic assistance in this project.

Bob Goings, publications manager
Harriet Fleischer, catalogue editor
Kathy Jones and Susan Heitman, design

Handbill for the first county bond election for improving Newport Harbor, June 1920.

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 section contains information about the University and the Irvine campus in particular. The second section, 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 three sections cover Student Affairs and Admissions and Policies, and the Graduate Division.

The major part of the catalogue contains information describing the various schools, departments within the schools, Interschool Curricula, University Studies, and Professional 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 and a course has no prerequisites unless noted. 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 (180 quarter units) needed to graduate. Each "1" represents one quarter course worth four quarter units. Courses that may be repeated for credit contain wording to that effect in the descriptive writeup.

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ACADEMIC CALENDAR

Fall Quarter 1972

Quarter begins	September 25
Orientation for New Students	September 25-29
Instruction Begins	October 2
Last Day to Add a Course	October 13
Last Day to Change Pass/Not Pass Option	October 13
Last Day to Drop a Course	November 10
Thanksgiving Holiday	November 23-24
Instruction Ends	December 8
Final Examinations	December 9-15
Quarter Ends	December 15
Christmas Holiday	December 22-25
New Year's Holiday	December 29-January 1

Winter Quarter 1973

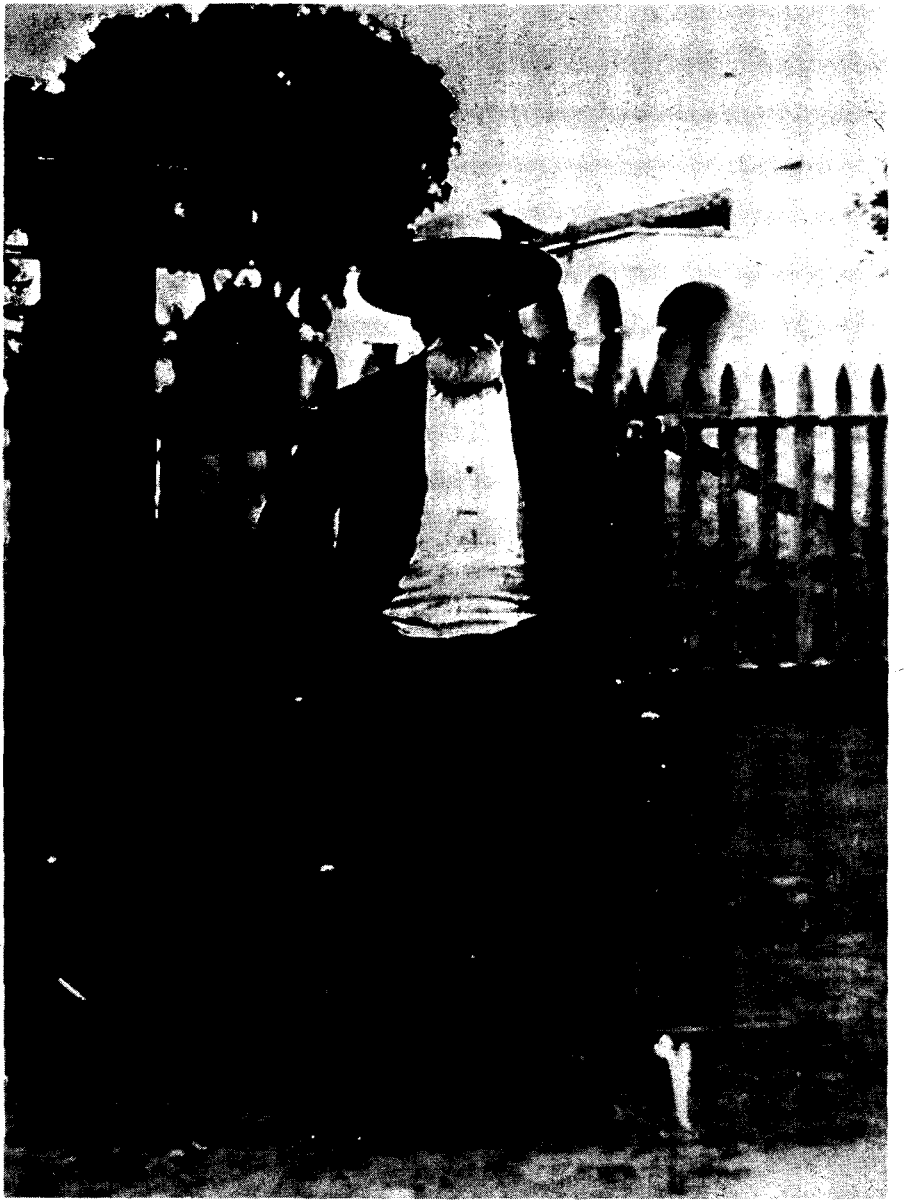
Quarter begins	January 3
Orientation for New Students	January 3-5
Instruction Begins	January 8
Last Day to Add a Course	January 19
Last Day to Change Pass/Not Pass Option	January 19
Last Day to Drop a Course	February 16
Holiday	February 19
Instruction Ends	March 16
Final Examinations	March 17-23
Quarter Ends	March 23
Spring Holiday	March 26

Spring Quarter 1973

Quarter Begins	March 29
Orientation for New Students	March 29-30
Instruction Begins	April 2
Last Day to Add a Course	April 13
Last Day to Change Pass/Not Pass Option	April 13
Last Day to Drop a Course	May 11
Memorial Day Holiday	May 28
Instruction Ends	June 8
Final Examinations	June 9-15
Commencement	June 16
Quarter Ends	June 16

THE UNIVERSITY

UC IRVINE - 1972-1973



Front: The Pio Pico peach tree at San Juan Capistrano Mission, around 1900. Pio Pico, last Mexican governor of California, sold the San Juan Capistrano Mission lands to his brother-in-law, Juan Forster, in 1845. While visiting Forster, Pico ate a peach which he found so exceptional that he planted the pit. It grew into this tree, which remained on the Mission grounds until 1930.

Back: Acu, a Luiseño Indian who was the bell-ringer at the San Juan Capistrano Mission.

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. 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, incorporated in 1855 under the leadership of the Reverend Henry Durant, 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. 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.

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

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

University Administration

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

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

The University Office of Relations with Schools serves as a liaison between the University of California and the other educational systems of the state. It is the spokesman for the University insofar as its educational policies affect the high schools and junior colleges from whence its students come. The staff is also available as a resource to schools and education-oriented groups.

THE IRVINE CAMPUS

The University of California, Irvine is located in Orange County, 40 miles south of Los Angeles and three miles inland from the Pacific Ocean. The surrounding hills and grazing lands give the campus a rural feeling, even though an estimated two million people live within a 20-mile radius.

A total campus area of 1,510 acres is intended to allow for ample open space and is an integral part of the similarly planned City of Irvine. The buildings will radiate outward in concentric circles from a large central park; the inner circle is now almost complete. UCI maintains the adjacent San Joaquin Freshwater Marsh, a 200-acre University-owned refuge for waterfowl and wildlife.

Classes opened in October 1965 with 1,589 students, freshmen through post-doctoral. In the fall of 1971, 6,885 students were enrolled: 5,360 undergraduates, 915 graduates, and 610 students, interns, and residents in the College of Medicine. Enrollment is projected to an eventual student population of 27,500.

The majority of students live off campus and commute daily, and most are dependent on cars for transportation. Student parking permits are valid for parking lots located on the perimeter of the campus. Students with or without cars can benefit from the services provided by the computerized car pool system and the share-a-ride station. A continuing effort is being made to provide the campus with convenient bus service. A restaurant, cafeteria, snack bars, and vending machines provide food service on campus. The preliminary town center across from the gateway entrance to campus consists of a single building which contains general services (a bank, malt shop, beer garden, market, travel bureau, post office, book store, and an interfaith center).

Beaches about three miles to the west are lined by communities and State Park recreation areas. Two mountain ranges and popular desert resort spas are within a two-hour drive. The climate is usually warm and dry; there is frequently a breeze from the ocean and occasional fog.

University Relations

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, UCI Town and Gown, Big I Boosters, the UCI Foundation, Oceanology Associates, UCI Public Relations Council, UCI Industrial Associates, the UCI Alumni Association, the UCI Parents Organization, the Associated Alumni of the UCI-California College of Medicine, and the UCI Medical Faculty Wives.

Activities and Recreation

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

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

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

Intercollegiate Athletics

UCI competes in intercollegiate athletics as an independent institution in the college division of the National Collegiate Athletic Association (NCAA). Irvine fields teams in 10 sports: baseball, basketball, crew, cross country, golf, sailing, swimming, tennis, track, and water polo. The water polo team won the NCAA championship in 1970 beating UCLA in the finals and last year finished seventh in the country. The UCI swimming team won NCAA titles in 1969, 1970 and 1971, and the tennis team won national titles the past two seasons. Basketball has competed in three regional playoffs and baseball has advanced to the Far West Regionals twice. Irvine's crew and sailing teams consistently rank high in intercollegiate competition on the West Coast, and the golf program has also been very successful. All-American honors have been awarded to over 40 UCI athletes. Athletics is under the administrative leadership of the Vice Chancellor — Student Affairs.

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 500,000 volumes and a current subscription list of more than 7,000 journals and serials. The collection is housed in a functional building designed to bring students and books together. With the exception of materials housed in the Department of Special Collections and reserve books in heavy demand, all periodicals and books are on open shelves and are easily accessible to all readers. Reference books, numbering about 10,000 volumes, including bibliographies, encyclopedias, handbooks, dictionaries, and indexes, are arranged in an open shelf collection. There are librarians in the Reference Department to assist in finding information and in using the reference tools. Informal instruction in the use of collections is available at any of the public service desks. A magnetic tape cassette player containing a twelve minute self-guided tour of the library may be borrowed at the Circulation Desk.

Special facilities and staff are provided for the Government Publications Department, which contains a collection of over 135,000 documents issued by the federal government, state, local, and foreign governments, and international organizations.

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

The Women's Christian Temperance Union, posing in front of a Baptist church in Orange.

The library copying service, supplemented by coin-operated copying machines, makes it possible to obtain reproduction service at all times. Microtext materials and various types of reading equipment are brought together in special facilities. Other special facilities include group study rooms, a piano room for reviewing musical scores housed in the library's stacks, a map collection, and a room containing special facilities for blind and partially-sighted students. When the University is in session, the library is open 86 hours per week.

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

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

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.

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

Center for Pathobiology

The Center for Pathobiology is an organized research unit established within the School of Biological Sciences to enhance the teaching programs and the research activities of its twenty-five participating research workers, including faculty members, undergraduate and graduate students, and postdoctoral scientists. The Center provides a focus for many activities in the School of Biological Sciences: notably, developmental biology, pathobiology, and environmental biology as it relates to pest control and pollution. Development of totally new strategies for controlling

insect pests with insect growth regulators and by genetic techniques is one of its primary goals. Another major goal is the analysis of normal and pathological development of insects and other invertebrates by genetic and biochemical techniques. In its role as an informational and research unit, the Center maintains two comprehensive and current reprint collections — an invertebrate pathology collection and an insect development and genetic collection — which are accessible to workers throughout the world. Center publications include bibliographies and research reports.

Computing Center

The Computer Facility provides concurrent interactive and batch computing service on two medium size, general purpose systems. The distinctive aspect of computing at UCI is the extent to which it is an integral part of the academic programs at both the undergraduate and graduate levels. Approximately 40% of the student body was involved with some form of instructional computing last year, the majority using an interactive terminal.

Many programming languages and library programs, such as statistical routines, are available to users. Computing instruction is offered by the Department of Information and Computer Science, other academic departments, and University Extension.

Information about computing services is available from the User Services Group, 360 Computer Science Building.

The Irvine Arboretum

The Irvine Arboretum is administered by the School of Biological Sciences and includes plans for a botanic garden which will encompass the entire campus. 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, is a teaching and research facility. It presently contains material on local populations of fishes, plants, insects, and mammals. Several important collections, notably the Sprague conchological collection, are housed in the Museum.

Public Policy Research Organization

The Public Policy Research Organization conducts policy-oriented research as a University-wide institution located on the Irvine campus.

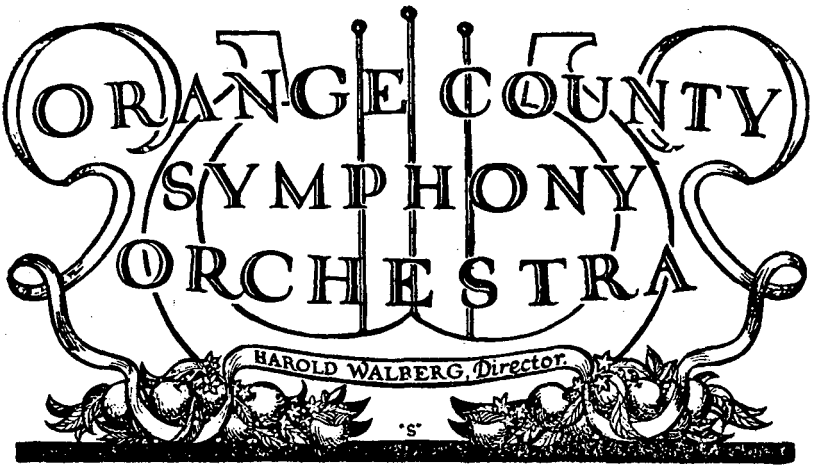
The basic objectives of "PPRO" are to initiate and conduct interdisciplinary research programs relevant to current and future public problems, to carry out such research projects for government agencies as will enhance its basic research program, and to participate in the development of training programs in the field of policy research and analysis.

Current interests of PPRO include design of a survey of community mental health centers; an analysis of demographic, economic, and educational trends in the UCI area; design of improved gaming and simulation capabilities for UC; compilation of an annotated bibliography on the subject of women at work; operation of a syndicated newspaper column presenting scientific information to children.

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

UC IRVINE - 1972-1973



FIFTH CONCERT

ASSISTED BY

AMERICA'S BIRD WHISTLING CHORUS

AGNES WOODWARD—CONDUCTOR

JOSEPHINE DURGAN, SOPRANO

GLADYS GIRTON—ACCOMPANIST

LORAINE GRIFFEN—ACCOMPANIST

Program

Miss Josephine Durgan is the daughter of Mr. C. M. Durgan of Orange, and who is one of the most faithful members of boosters of the Orange County Symphony. Miss Durgan is a sincere musician and is a product of our county of which we are proud.

Miss Agnes Woodward stands out eminently in the music world as the developer of whistling into an artistic form expression. She is the founder and present director of the California school of whistling, located in Los Angeles. One finds her students on concert platforms all over America.

ORANGE COUNTY MUSICIANS

Front: Madame Helena Modjeska, a Polish actress who came to Anaheim in 1876 with a small colony of Poles who wished to settle in America. One member of their group, Henryk Sienkiewicz, later achieved literary immortality through his novel *Quo Vadis,* and Madame Modjeska herself eventually became one of America's most distinguished actresses. The canyon where they settled is now called Modjeska Canyon in her honor. This picture shows Madame Modjeska in the role of Mary Queen of Scots.

Back: Program notes from a 1922 performance of the Orange County Symphony Orchestra.

THE ACADEMIC PLAN

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.

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. Emphasis is placed on a coherent program stressing individual needs, including studies distributed among a number of fields which are often interdisciplinary in nature.

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. 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.

ACADEMIC STRUCTURE

Central to the 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.

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.

University Studies, an interdisciplinary program of courses for freshmen, operates independently of the schools and the Council for Interschool Curricula. Physical Education is also separate. Neither of these offers a degree.

Professional schools on the campus include the School of Engineering, which offers undergraduate and graduate degree programs, the Graduate School of Administration, and the College of Medicine. There is also a Program in Teacher Education.

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.

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 11.

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

Campers in Laguna Beach, 1889.

DEGREES OFFERED

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

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

Honors at Graduation

Students may graduate with honors, either *summa cum laude, 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 A BACHELOR'S DEGREE

UNIVERSITY REQUIREMENTS

UC Requirements

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

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

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

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

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

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

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

   b. Passing an examination in the subject.*

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

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

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

UCI Requirements

3. Breadth requirement* (the "6-3-3 requirement"). Rather than prescribing specific courses or areas, the faculty simply states that a given portion of a student's course work should be in areas outside his major. This requirement may be met by taking course work in three schools (Schools of Biological Sciences, Fine Arts, Humanities, Physical Sciences, or Social Sciences) or, by petition, work in Interschool Curricula programs (Comparative Culture, Information and Computer Science, Social Ecology), in Engineering, or in undergraduate courses taught in the Graduate School of Administration, outside the school of the student's major, as follows:

   A student must take *six* courses in one school outside his major and *three* courses in each of two other schools outside his major. (Changes may be made in the UCI breadth requirements too late to be included in the 1972-1973 catalogue. New students should consult their advisors to determine whether such changes will affect their academic programs.)

4. Credit for 45 courses (180 quarter units), earned by examination, by other evaluation, or course work. (A course normally 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.

Although there are no general requirements in foreign languages for students at UCI, some departments do have requirements; see below. Students considering graduate education should bear in mind that the ability to read one or more foreign languages is a requirement of most graduate schools.

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.

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

The student should have determined his area of concentration no later than the beginning of the junior year, having made certain that he has the background and the preparation necessary to accomplish junior and senior work in his major.

Transfer students should assume that equivalent courses taken elsewhere will fulfill school and departmental minimum course requirements for graduation (see the section on "Planning for Transfer to UCI," p. 54).

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

School of Biological Sciences

Biological Sciences Core Curriculum (101A-B-C-D-E-F-G, 102A-B-C-D-E-F); minimum of three satellite courses (see p. 89);Chemistry 1A-B-C; Chemistry 51A-B-C; Humanities 1A-B-C; Mathematics 2A-B-C; Physics 3A-B-C or 5A-B-C.

School of Fine Arts

No School requirements.

Departmental Requirements

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

Art History Major: One years survey in history of art (40A-B-C); nine upper-division courses in art history, with at least one course in each of the following areas: Ancient (100, 100N, 101, 102), Medieval (103, 103N), Renaissance (104, 104N, 105, 105N), Baroque (106, 106N, 107), and Modern (108, 108N, 109, 109N, 110N, 128, 129); two studio art courses; three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass).

Dance – (See p. 112 for requirements to enter department as a major.) Performing Major: Four years studio work in ballet (30A-B-C, 35A-B-C, 130A-B-C, 135A-B-C); three years studio work in free-style (40A-B-C, 45A-B-C, and 140 for three quarters); two years studio work in jazz (50A-B-C, 55A-B-C); one years work in theory (20A-B-C); one years work in music for dancers (120A-B-C); one course in dance notation (65A); three courses in history of world dance (110A-B-C); three courses in choreography (155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

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

choreography (155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Drama – One years survey in the development of dramatic literature (40A-B-C); one year in acting (30A-B-C); one year in design (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 Pass/Not Pass); participation (acting or technical) in at least one major University Theatre production a year (160).

Music – (See p. 120 for requirements to enter the department as a major.) Two years work in theory (30A-B-C, 130A-B-C); two years work in musicianship (5A-B-C, 15A-B-C; Music 5A-B-C to be taken concurrently with 30A-B-C and Music 15A-B-C to be taken concurrently with 130A-B-C); one years work in history and literature of music to be preceded by 30A-B-C (40A-B-C); one years work in counterpoint (135A-B-C); one years work in form and analysis (155A-B-C); three upper-division courses in history and criticism of music (140 through 145, 152A-B-C); three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass); command of piano; participation in the chorus, orchestra, or in chamber music each year; a senior recital; and a senior examination covering an assigned representative repertory drawn from the total history of music. For vocal majors only: vocal performance (163) each quarter.

School of Humanities

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

Freshmen and sophomore majors are required to consult with their assigned academic advisors at least once per quarter (no later than the second week of a quarter). An advisor will give his written approval of a student's program only when he is convinced it is an intelligent one and will prepare the student properly for upper-division work.

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

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

Departmental Requirements

Classics – The department offers two majors, a major in Classics and a major in Classical Civilization. The major in Classics may be taken with an emphasis in either Greek or Latin.

Classics (Greek emphasis). Greek 2A-B-C; three literature courses on the Greek 100 level; Greek 110; Latin 1A-B-C; Latin 2A-B-C.

Classics (Latin emphasis). Latin 2A-B-C; three literature courses on the Latin 100 level; Latin 110; Greek 1A-B-C; Greek 2A-B-C.

Classical Civilization. Greek (or Latin) 1A-B-C; Classics 151; Classics 152; Classics 153; two courses from Classics 141, 160, 170; one ancient history course; one ancient philosophy course; one ancient art course.

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

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

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

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

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

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

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

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

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

Russian with linguistics emphasis — Russian 10A-B; 11; 101A-B-C; two courses from 151A-B-C and 160A-B; Linguistics 101; 102; 103; 151.

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

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

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

Linguistics: Linguistics 101, 102, 103; Philosophy 135.

School of Physical Sciences

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

Departmental Requirements

Chemistry — Basic Requirements: Mathematics 2A-B-C, Physics 5A-B-C with laboratory (Physics 3A-B-C with laboratory will be allowed for Chemistry-Biology double majors), Chemistry 1A-B-C, 51A-B-C, 131A-B-C, 150.

Electives: Five courses chosen from the Elective List (see p. 181). These must include at least two Chemistry courses and at least one laboratory course from the group Chemistry 151, Chemistry 152, Biology 125, Physics 150, Physics 151, Physics 152, Physics 153. Chemistry 180 may be counted no more than once.

Scientific Breadth Requirement: A total of six additional 4- or 5-unit courses chosen from the offerings of the Departments of Mathematics and Physics and the School of Biological Sciences. (These may be taken on a Pass/Not Pass basis subject to the usual restrictions on Pass/Not Pass enrollment.)

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

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

Physics — Physics 5A-B-C-D-E with laboratory; six quarter courses numbered between 110 and 149; two quarters of advanced laboratory (Physics 151-153); Mathematics 2A-B-C; Mathematics 3A-B-C or 140A-B-C; three courses from Mathematics 141A-B-C, 142A-B-C, 144A-B-C, or Physics 161A-B-C with Physics 161A-B-C particularly recommended; and three additional upper-division courses chosen from the Schools of Physical Sciences, Biological Sciences, Engineering, or the Department of Information and Computer Science. Alternative requirements will be developed for students with special interests.

School of Social Sciences

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

School of Engineering

The UCI breadth requirement, described on page 23, does not apply.

The basic undergraduate program in Engineering consists of the Engineering core (Engineering 100A-B-C, 101A-B-C, and 105A-B-C), six additional Engineering courses, six mathematics courses, eight courses in basic science, one course in computer science, nine breadth courses, three technical elective courses, and three free elective courses. The manner in which the student selects the unspecified courses determines the option or area of concentration. At the present there are five designated: Electrical, Civil and Environmental, Mechanical, and General Engineering, and Environmental Management (multiple major). For details see page 263.

Interschool Curricula

Comparative Culture

All majors (except for transfer students who may be granted waivers for courses where appropriate) must satisfactorily complete: (1) Comparative Culture 1A-B, Man in Cultural Perspective, by the end of the sophomore year; (2) Comparative Culture 10, Introduction to Culture Study (at least two of several distinct culture surveys — African, American, Asian, Black, Chicano), by the end of the sophomore year; (3) 48 units of courses offered outside of Comparative Culture, upon advisement; (4) 24 units in language or equivalent courses; (5) 48 units in Comparative Culture courses, from any one of the following options: (a) *Plan A* focuses on ethnic/cultural studies and entails upper-division work in African, American, Asian, Black, Chicano and/or Latin American cultures; (b) *Plan B* focuses on disciplinary or interdisciplinary methodologies such as upper-division courses in aesthetics, anthropology, economics, history, literature, political science and/or sociology; (c) *Plan C* involves a contract — made at the end of the sophomore year — between the individual student and the Comparative Culture Major Committee. The contract will specify an individualized curriculum revolving around a particular theme, topic, or problem in cross-cultural and/or interdisciplinary culture study.

All students entering the Program in the freshman year will take the Core Course, Comparative Culture 1A-B, plus 12 units of lower-division work; and they would be well advised to fulfill the language requirement or equivalent during the first two years of study.

Information and Computer Science

Mathematics 2A-B-C and two of the following one-year sequences in mathematics: 3, 140, 155, 120, 121, 130, 131, 170; Information and Computer Science 1, 2, 3, 110A-B, 120A-B, 130A-B, 190A-B-C.

These requirements are under study and may be changed in the future. Students should consult the Departmental Information Bulletin, issued in fall 1972, for a complete listing of courses and subject content.

Social Ecology

Social Ecology 1A-B-C; Social Ecology 10; the appropriate prerequisites for the field study paths undertaken (these prerequisites are numbered Social Ecology 2 through 8); six quarter courses of Field Study (Social Ecology 197); and four upper-division courses in Social Ecology (those numbered 101 or above).

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.

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

In preparation for choosing a major the student should consult his advisor about the possibilities which may be open to him. Even though the advisor will not be thoroughly familiar with all fields, he can suggest ways to investigate other areas of study. Students should feel free to go to any department and ask to speak to an academic advisor in order to learn more about that field, its programs of study, its requirements for admission and graduation, and possible enrollment limitations.

While some students are aware that they might like to major in one of several subjects, other students are only 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 opportunities and possibilities. Students with absolutely no idea of the field in which they would like to major will have time to take courses in various fields and determine their specific interests.

It should be kept in mind that some major programs require specific preliminary study; that courses required for graduation or for a major which the student may later wish to elect must be considered; and that one must be cautious about excessive early concentration in a certain field, or else he may be prevented from moving to a major in a different field if he changes his mind. A student should not overlook any possible opportunities. The faculty advisor can be helpful in formulating an overall lower-division program which will keep the maximum number of possible majors open.

If certain courses are not available, then substitutions must be found. It is the function of an academic advisor to help the student plan his program on an individual basis 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 career goals 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.

ACADEMIC ADVISING

At the time of admission every undergraduate student at UCI is assigned for purposes of academic advising to the school or to the interschool curriculum which corresponds to the student's stated area of academic concentration (major). Students who have not declared an area of academic concentration at the time of admission are also assigned for purposes of academic advising to one of the schools or interschool curricula; this assignment will continue until the student reaches a decision concerning a major, at which time he will submit a petition for change of major and be transferred for advising purposes to the appropriate school or curriculum. Jurisdiction over all questions of academic regulations and academic standing rests with the dean or director of the school or curriculum to which a student is currently assigned for purposes of academic advising. Thus, all requests to add or drop courses, petitions seeking waiver or change of graduation or other requirements, and petitions to change area of academic concentration must be processed through the office of that dean or director.

Each school and interschool curriculum is responsible for maintaining a system which provides academic advising by faculty members. These systems differ among the several schools and curricula. In some instances all of the faculty in the school or curriculum serve as advisors; in other cases only certain of the faculty are designated as advisors. In each instance, however, every student will have a faculty advisor. Responsibility for informing students of the identity of their advisors rests with the dean or director of the appropriate school or curriculum. This is normally done by letter, but if at any time a student is uncertain of the identity of his faculty advisor he may obtain that information from the office of the appropriate dean or director. In many schools or curricula a student may arrange to change advisors if he wishes by submitting a Student Petition to that effect. A change in area of concentration often involves a change in advisor. This will always be the case when the change of concentration is to a different school or curriculum. The new school or curriculum will assign a new advisor and inform the student.

In some schools and curricula consultation between students and their advisors is mandatory. Students are responsible for knowing the governing regulations of the school or curriculum to which they are assigned for purposes of academic advising.

Irrespective of whether or not consultation between a student and his advisor is required, *the student is responsible for initiating and maintaining periodic contact with his assigned advisor.* An appropriate time for the initial contact is during the week prior to the beginning of the student's first classes at UCI, or earlier at the time of registration if this is possible. Thereafter consultation between student and advisor at the time of registration for each subsequent quarter is desirable. The actual frequency of these meetings will be determined of course by the desires of the student, his advisor, and by the governing regulations. It is the obligation of the advisor to help the student plan an appropriate program of study and interpret the academic regulations of the campus, *but the student is himself solely responsible for meeting the academic regulations and remaining in good academic standing.*

PRE-PROFESSIONAL EDUCATION

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

Pre-Dentistry, Medicine, Nursing, Veterinary Science

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

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

Business and Public Administration

Undergraduate degree programs in business and public administration are not offered at UCI. Students preparing for a career in business or government usually would major in the humanities or social sciences. Students particularly interested in business administration are usually advised to concentrate on work in economics. Students interested in public administration are usually advised to emphasize economics and political science. Students wishing to prepare for the program of study in the Graduate School of Administration at UCI should choose electives to meet the general admission requirements of that program (see p. 273). The Graduate School of Administration, in conjunction with other schools on this campus, offers a special five-year program (commonly referred to as a "3-2 program") leading to both a Bachelor's Degree in the appropriate school and a Master's Degree in Administration. Application for admission to the program is made in the spring of the junior year.

Teacher Education

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

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

For further details on preparation for teaching, see page 279.

SUPPLEMENTARY EDUCATIONAL PROGRAMS

Education Abroad Program

The Education Abroad Program offers opportunities to undergraduate and graduate students of the University of California to study for credit in universities overseas, and serves also as a source of information on all types of educational exchange experiences.

Study centers have been established in France, Germany, Ghana, Hong Kong, Israel Italy, Japan, Lebanon, Mexico, Kenya (Nairobi), Norway, Spain, Sweden and the United Kingdom and Ireland. Participants generally 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.

For information about eligibility, deadlines, financial aid, or for further material concerning particular centers abroad, consult Helen Stanley, Trailer 409, telephone (714) 833-6343.

Summer Sessions

Two summer sessions will be held on the Irvine campus. Session I will run from June 18 to July 25, 1973. Session II will be from July 26 to August 31, 1973. Students may enroll in either or in both sessions. Those who enroll in both take an academic program equivalent to a regular quarter, thus accelerating their progress toward a degree.

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

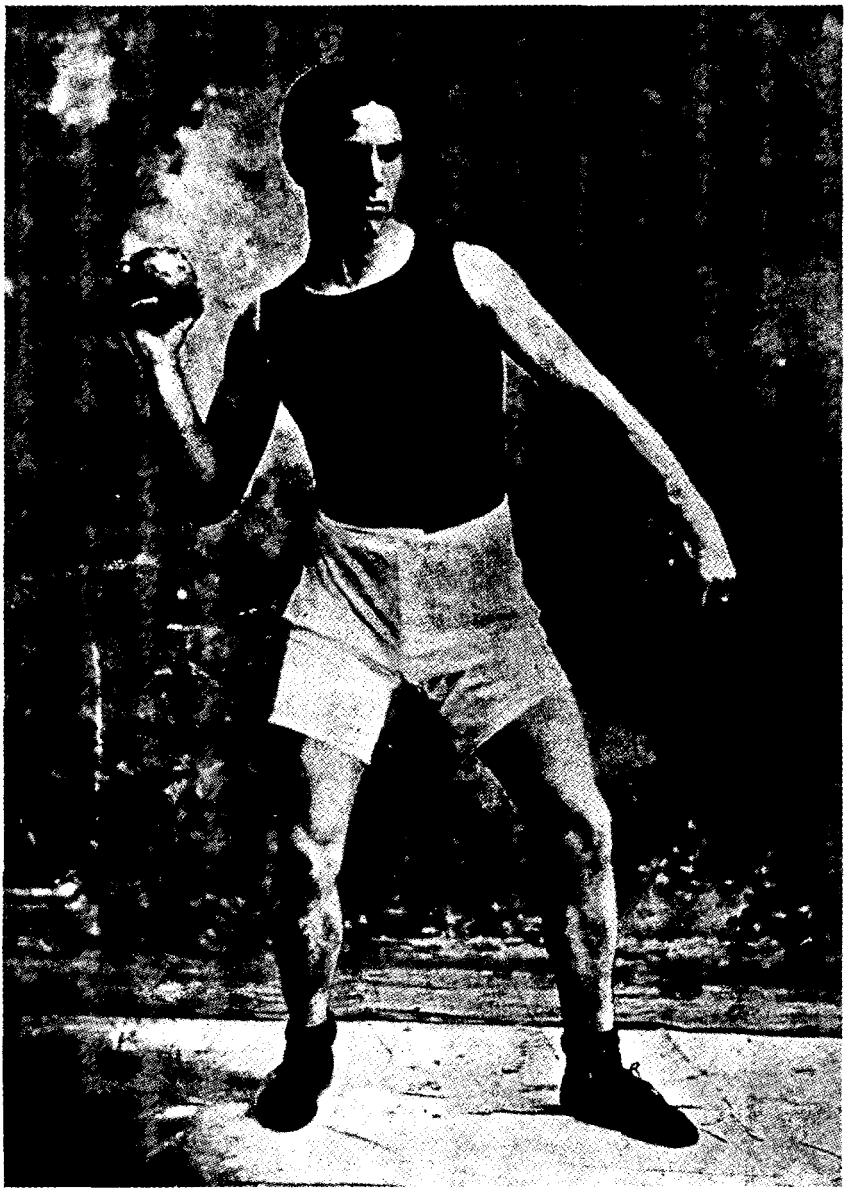
Information regarding Summer Session may be obtained from the Summer Session Office in the Computer Science Building, telephone (714) 833-5493. Catalogues and application forms will be available in February.

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.



STUDENT AFFAIRS

UC IRVINE - 1972-1973

The Senior Class mourn the loss of a banner which was carelessly left hanging on an electric wire Saturday evening.

The Class of '06 is supposed to know something about it.

Front: This shotputter appeared in the 1904 edition of the Santa Ana High School yearbook, *The Ariel.*

Back: A flyer evidently distributed by the 1905 class of Santa Ana High School.

STUDENT AFFAIRS

The Vice Chancellor for Student Affairs has responsibility for a full range of activities designed to serve the student. The various offices described below are primarily student centered and accept the challenge of making their services more responsive to student concerns, and, when necessary, of extending them to fit expanding student values.

We also feel that a program in student affairs must 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 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. It is our responsibility 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.

Through assuming a student advocate role, the student affairs staff hopes to foster a level of trust and mutual engagement leading to student participation in all areas. Bi-weekly meetings of the Vice Chancellor's staff are open to students.

DEAN OF STUDENTS

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

Student Services

Five special areas are handled in the Student Services Office: students who are physically disabled, international students and scholars, orientation, questions concerning veteran benefits, and Career Planning and Placement. The Student Services Office is in Trailers 702-704 (behind Humanities Hall), phone 833-7244.

Physically disabled students at UCI can receive assistance with all areas of campus life. Students or their counselors are encouraged to contact the Student Services Office.

International students and scholars will find the Student Services Office helpful in obtaining documentation for visas, extensions, work permits, etc. Assistance is also provided for locating off-campus housing, host family programs, and personal counseling.

UCI students who receive benefits from the Veterans Administration or other Federal agencies for veterans affairs, or have questions concerning eligibility, should seek assistance in the Student Services Office. Certification of attendance at UCI can be obtained here for V.A. purposes.

An additional function of the Student Services Office is the coordination of orientation programs for students new to UCI. We consider orientation to be an integral part of each student's educational experience. Orientation is not only a beginning, but it is also a process that continues, both formally and informally, throughout the student's collegiate career.

The orientation programs include: Housing Open House — a one-day seminar in the spring on housing in the Irvine area; UCI-CCM (California College of Medicine) Orientation — a program in late June for students entering medical school; the Student Parent Orientation Program (SPOP) — a live-in weekend program for new students and their parents to introduce them to UCI prior to the beginning of classes; Transfer Student Program — the last weekend in August is devoted to the special needs of transfer students with emphasis on academic advising; Uni-Prep — a 12-day live-in program concentrating on the exploration of self through personal and vocational testing, speed reading and study skills, and general discussion on higher education; Fall "0" Week — the week before classes begin affords new students a chance to explore their academic program, identify campus resources, and meet one another; Winter and Spring Orientation — one-day informal orientation programs for the fewer number of students entering during mid-year.

Career Planning and Placement

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

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

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

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

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

Catalogues, brochures, and materials covering requirements and admission to professional and graduate schools are available. The Career Planning and Placement Office is located in Trailer 706.

Financial Aids

Almost every student needs some kind of financial assistance during his or her academic career. The four forms of financial aid available at UCI are scholarships,

grants, loans, and employment. UCI uses only the College Scholarship Service instruments for estimating financial need.

Scholarships

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

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

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

Grants

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

Federal Educational Opportunity Grants are available for undergraduate students only. The basic purpose of this program is to assist students whose exceptional financial need would prevent their attending college. Grants range from $200 to $1,000 per year but in every case must be less than one-half of a financial aids package, which may consist of a loan, a State Scholarship or other approved scholarship, or a grant. Grants are renewable if financial need continues and good standing is maintained. Recipients must be U.S. citizens or permanent residents. (See Educational Opportunities Program, p. 41.)

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.

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 stu-

dent, $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 18 years of age must have parental approval on the loan section of the application and on a promissory note. A notarized Oath of Affirmation is also required.

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

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

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

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

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. Recipients must be U.S. citizens or permanent residents.

The President's Work Study program provides part-time employment for all regularly enrolled students who demonstrate financial need.

Applications for employment should be filed between November 1 and April 15.

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

Student Employment

The Student Employment Office assists UC students, student spouses, and alumni in obtaining part or full-time employment during the academic year and summer vacation. Students with Work-Study grants may obtain on-campus and/or off-

campus job referrals in the Student Employment Office. The Office is located in the Library-Administration Building, Room 1441.

Job listings are provided to assist each applicant in finding suitable employment. While on-campus employment is limited, off-campus job listings range from general labor to highly technical work. In addition to general job openings, room and board jobs are listed with the office. Applicants may also register for child care, home typing, and tutoring positions. A library of summer work catalogues and brochures including information on federal and state employment, recreation work, camp jobs, and employment abroad is also available.

Educational Placement

The Educational Placement Office assists and supports prospective educators in locating and securing desired positions as teachers, faculty members, counselors, or administrators in public and private schools, community colleges, four-year colleges, and universities throughout the United States and abroad.

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

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

Housing and Food Service

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

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

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

The University also has 350 one-, two-, and three-bedroom apartments on campus. Most are furnished, and all have carpeting, draperies, stoves, and refrigerators. The

apartments are rented to married students, single graduate students, and some faculty and staff.

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

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

Student Activities

The Student Activities Office is concerned with facilitating learning and personal growth for all students. The professional staff serves as a resource to provide a broad spectrum of learning experiences.

The Activities Office is dependent upon student involvement in all aspects of planning and implementation of programs and services.

Student Organizations

There are presently over 80 registered student organizations at UCI covering a broad spectrum of political, social, academic, recreational, and religious interests. The Student Activities Office works to facilitate and assist with the myriad of programs and projects undertaken by these groups. Leadership seminars and quarterly meetings are conducted for the benefit of organizational presidents/chairmen. The Student Activities Outpost (Trailers 903-904) serves as the headquarters for student groups.

ASUCI

The Student Activities Office also works closely with the programming committees of the Associated Students of UCI in the planning and implementation of student-sponsored special programs and fund-raising projects.

Child Care Center

The Child Care Center, located in the Barn on the Social Science Farm, provides day care for the children of UCI students, faculty, and staff. Children between the ages of two and five are admitted to the program.

Verano Place Pre-school

The Verano Place Pre-school is located in the Recreation Center in Verano Place and serves the children of residents of Verano Place. The Pre-school offers a half-day educational program both morning and afternoon.

Community Projects Office

The Community Projects Office (CPO) coordinates all major UCI community volunteer programs and service projects. This student-run and student-initiated project is funded by the Regents of the University of California, ASUCI, and outside donations. Any students interested in working with the Community Projects Office on any of these existing projects or starting their own projects are encouraged to visit that office in T901 or call 833-5588.

Campus Union Program and Facilities

The student Campus Union Board has responsibility for the operation of the facilities, services, and programs of Irvine's "Union without walls." The Temporary Union Building (TUB), near Humanities Hall, has a lounge, T.V., billiards and snooker, cards, and a variety of games; it houses a small Student Store which sells school supplies, posters, art goods on consignment, some texts, and lab kits at a low cost to students.

Mesa Court Residence Halls

The Student Activities staff assists with the development and coordination of programs and activities within Mesa Court, advises the Presidents' Council, and assists the residence halls in a number of capacities including personal counseling and fiscal management for the Mesa Court Association.

Verano Place

The Student Activities staff works with the Verano Advisory Board and other residents of Verano Place to develop supplementary programs appropriate to the needs of married and graduate students, such as recreation and craft programs for Verano children.

Commuter Student Programs

The Student Commuter Committee, a function of both ASUCI and the Activities Office, is concerned with developing ideas and instituting programs to deal with problems and needs of the 80% of the UCI student body which does not live on campus.

Student Travel Bureau

The services of the Student Travel Bureau have been expanded in recent months to meet the growing interest expressed by students, faculty, staff, and registered alumni of UCI for foreign travel information. Some of the services offered by the Student Travel Bureau include: charter flight information and applications; international student I.D. card applications; youth hostel card applications; and general information pertaining to passports, visas, Eurailpasses, vaccinations, etc.

Miscellaneous

The Student Activities Office also offers a variety of other services and programs for students and the general academic community. Some of these include: Activities Phone Line Ext. 6919 (24 hours a day); Ditto Service; Finals Center; Leadership Seminars; Quarterly Calendars; Spring Carnival; Student Directory; Student Handbook; Student Interest Cards; Summer Session Activities Program.

In the large and complex structure of our University, it's not possible to perceive all that's happening around you, to discern all the choices. That's what the Student Activities staff is all about. These people can help you find the choices – whatever your interest, problem, or concern. Use them! They can be found in Gateway Commons (833-6920), Student Activities Outpost T903-904 (833-7843), or Mesa Court Outpost (833-7442).

Educational Opportunities – Special Services, Recruiting, Counseling Programs

The purpose of these programs is to assist culturally and economically disadvantaged as well as physically handicapped students in enrolling and succeeding in aca-

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

Eligibility

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

Financial Assistance

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

Academic Support

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

Admissions

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

Inquiries regarding the EOP-Program should be directed to Office of Admissions, University of California, Irvine; Irvine, California 92664; (714) 833-6704.

Central Campus Calendar

All campus and non-campus organizations should contact this office for assistance in scheduling all events that take place on campus. In addition to securing facilities for an event, the CCC office assists with ordering support services (projectors, refreshments, tables, chairs). The Calendar Office is in the Library-Administration Building, Room 1433, telephone 833-7494.

Recreation

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

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

For further information contact the Recreation Office, Room 1328, Crawford Hall, or call 833-5346.

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 – are concurrently "acted out" through the organizational medium of ISL and its membership. The Innovation in Student Life Office is located in Trailer 902 (next to Student Center 2).

Ombudsman

The ISL Director's ombudsman function consists of the resolution of individual or group grievances, but it also includes the preventive measures of personal counseling and group interaction. While his work involves neither administrative authority nor responsibility, he has full freedom of access and inquiry and may take appropriate action. Complainants are assured confidentiality.

STUDENT HEALTH SERVICES

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

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

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

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

Optional additional insurance for students during vacation is available at the Student Health Service.

COUNSELING SERVICES

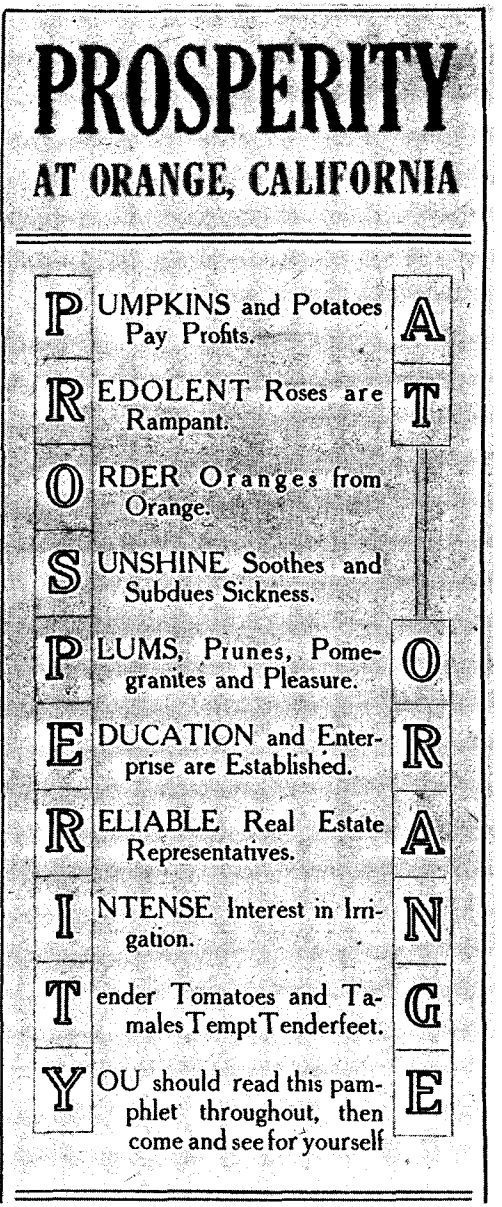
Counseling represents an opportunity for a person to clarify his needs and goals through dialogue with another person.

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

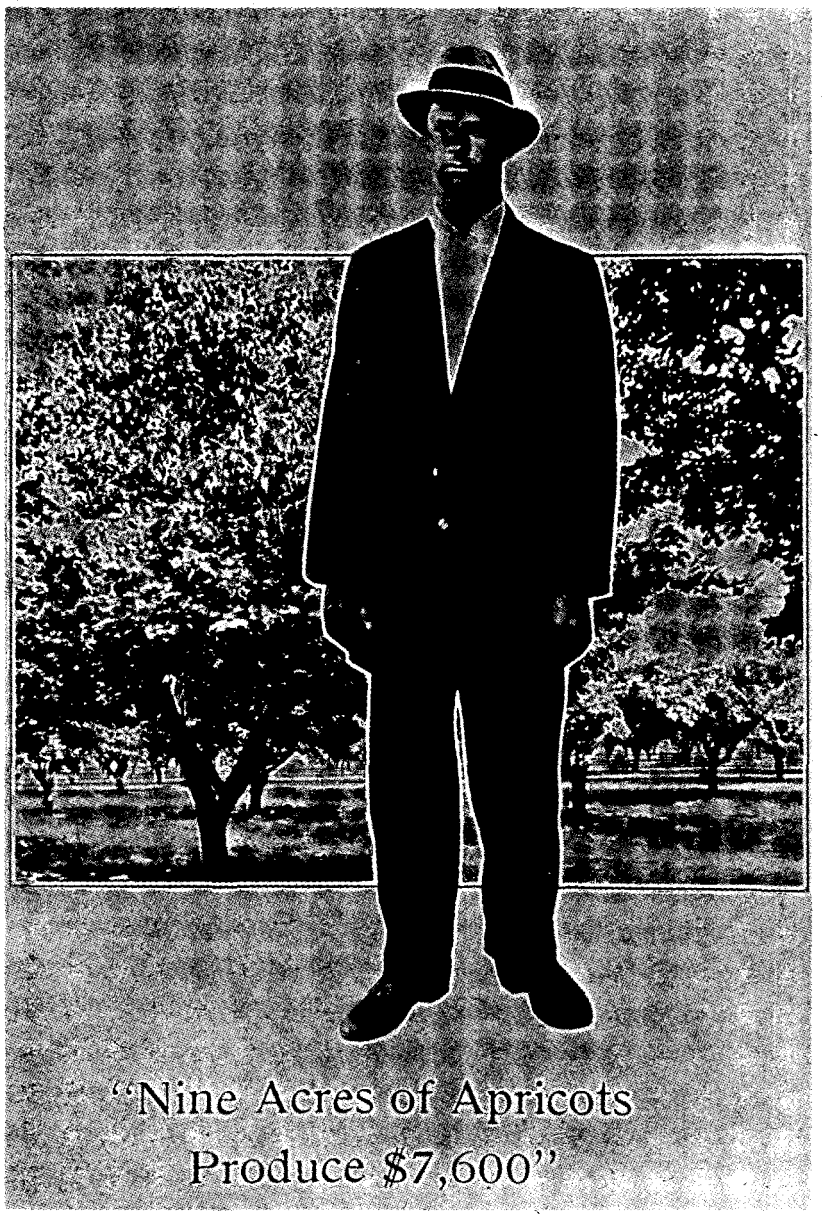
In addition to providing opportunities for a student to share his concerns in a private setting on a one-to-one basis, the Center also sponsors group activities for students who wish to explore their values and feelings in collaboration with others. The Counseling Center emphasizes the confidentiality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

STUDENT CONDUCT AND DISCIPLINE

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



ADMISSIONS AND POLICIES



Both illustrations are from public relations folders for the City of Orange, one published in 1913 and the other in 1914.

UNDERGRADUATE ADMISSIONS

The University's undergraduate admission requirements, which are the same on all campuses, are based on two principles: The best predictor of success in the University is high scholarship in previous work, and the study of certain subjects in high school gives a student good preparation for University work.

Applying for Admission

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

Fall quarter 1973	November 1, 1972
Winter quarter 1974	July 1, 1973
Spring quarter 1974	October 1, 1973

Applications will not be released prior to the above dates; however, they may be requested in advance. All campuses observe these dates for the beginning of application filing and will accept for consideration all applications filed during the first month of the filing period. After the first month the closing deadline will vary from campus to campus. Once enrollment quotas have been filled, additional applications cannot be accepted and will be redirected to another University campus where enrollments are still open.

Through its redirection program, the University has been able in the past to assure that each qualified applicant is offered admission to one of the University campuses.

Application Fee

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

Duplicate Applications

Only one application for the University of California is permissible, and it entitles you to attend the campus of your choice if there is space available. Fees submitted with duplicate applications will not be refunded.

Change of Campus

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

Transcripts

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

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

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

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

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

Notification of Admission

Candidates for the fall quarter will be notified whether their application has been retained for consideration by their first choice campus, or redirected, by February 15. Most candidates will receive notice of their admissibility by April 15. (There are similar notification periods for other quarters.) Delays will occur if required records have not been received by the Office of Admissions. Since each application is considered individually, the length of time before notification is subject to some variation depending upon the unique circumstances of each applicant.

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

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

Re-Application

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

ADMISSION TO FRESHMAN STANDING

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

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.

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 listed below under requirements for California residents; (3) earn a grade point average of at least 3.4 (B-plus) on the courses used to meet the subject requirements; (4) submit test scores from the College Entrance Examination Board: Scholastic Aptitude Test – Verbal and Mathematics; Achievement Tests – English Composition, Social Science/Foreign Language, Science/Mathematics.

Requirements for California Residents

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

Subject ("a through f") Requirement

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

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

b. **English, 3 years:** Composition, literature, oral expression.

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

d. **Laboratory Science, 1 year:** One laboratory science, taken in the tenth, eleventh, or twelfth grade.

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

f. **Advanced Course, 1 or 2 years,** satisfied by one of the following:

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

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

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

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

Scholarship Requirement

Not only must you earn at least a C in each of the courses required for admission, you must also earn an overall average of B in those on the list which you take after the ninth grade.

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

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

Examination Requirement

All freshman applicants must submit scores from the College Entrance Examination Board tests listed below. If you are applying for admission to the fall quarter, you should take the tests no later than January of your senior year. The following tests are required:

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

If you are a California resident and your scholarship average in the required high school subjects is from 3.0 to 3.09 inclusive, you must earn a total score of 2,500 or higher in these five tests. If your scholarship average is 3.10 or above, these test scores will not be used to determine your eligibility. However, scores must be submitted by all applicants to assist in counseling, guidance, and placement, and when possible, to satisfy the Subject A requirement.

Subject A Requirement

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

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

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

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

Admission by Examination Alone

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

Examination Arrangements

Make arrangements to take the required tests with the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton, New Jersey 08540. (Test fees should be paid to the Educational Testing Service, not the University.) Your test scores will be regarded as official only if they are reported directly to the Admissions Office by the Educational Testing Service. Also, your final notification of admission cannot be released until your scores from the CEEB tests have been received by the Admissions Office. The test dates are: October 14, 1972 (SAT in California/Texas only); November 4, 1972 (SAT only); December 2, 1972; January 13, 1973; February 6, 1973 (Greek Ach. only); March 3, 1973; April 7, 1973 (SAT only); May 5, 1973 (Achievement only); July 14, 1973.

ADMISSION IN ADVANCED STANDING

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

If you are a nonresident applicant, you must meet the requirements listed below in addition to those described at the end of this section.

Advanced Standing Admission Requirements

The requirements for admission in advanced standing vary according to your high school record. If you have completed less than twelve quarter or semester units of transferable college credit since high school graduation, you must also satisfy the examination requirement for freshman applicants.

The transcript you submit from the last college you attended must show, as a mini-

mum, that you were in good standing and that you had earned a grade-point average* of 2.0 or better. If your grade-point average fell below 2.0 at any one college you attended, you may have to meet additional requirements in order to qualify for admission.

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

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

2. If you were not eligible for admission as a freshman only because you had not studied one or more of the required high school subjects, you may be admitted after you have:

   a. Established an overall grade-point average of 2.0 or better in another college or university,

   b. Completed, with a grade of C or better, appropriate college courses in the high school subjects that you lacked, and

   c. Completed twelve or more quarter or semester units of transferable college credit since high school graduation or have successfully passed the CEEB tests required of freshman applicants.

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

3. If you were ineligible for admission to the University as a freshman because of low scholarship or a combination of low scholarship and a lack of required subjects (see p. 49), you may be admitted after you have:

   a. Earned a grade-point average of 2.4 or better in at least 84 quarter units (56 semester units) of college credit in courses accepted by the University for transfer, and

   b. Satisfied the high school subject requirement by completing appropriate college courses with a grade of C or better.

   The exception described at the end of 2 above also applies in this case.

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

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

Nonresident Advanced Standing Applicant

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

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

PREPARING FOR THE UNIVERSITY

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

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

Advanced Placement

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

Credit from Another College

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

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

ADMISSION TO LIMITED STATUS

Limited students are those with a Bachelor's degree who are admitted to the University for the purpose of completing a specified program of courses required for admission to graduate status. See Graduate Division, p. 73.

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. Please write the foreign student evaluator, Office of Admissions, for complete details.

PLANNING FOR TRANSFER TO UCI

The University is committed to serve as fully as possible the educational needs of students who transfer from other California collegiate institutions. The principles covering transferability of unit credit and course credit are explained below and, unless otherwise indicated, are much the same whether transfer is from a two-year or a four-year institution. Information regarding eligibility for transfer may be found above in the section on Admission to Advanced Standing.

Unit Credit for Work Taken Elsewhere

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

California Community (Junior) Colleges

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

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

Four-Year Institutions

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

University of California Extension

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

College Level Examination Program

Ten quarter units are granted for each area examination passed with a score of 500

or better. Five quarter units are granted for each subject examination covering work appropriate to the University's degrees passed with a score of 500 or better.

Course Credit for Work Taken Elsewhere

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

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

Course Requirements

Course requirements at UCI are in four categories: University of California, UCI, school, and departmental. Courses not specifically applicable to these are considered to be electives. See page 22 for a complete description of these requirements.

University of California Requirements

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.

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

UCI Requirements

6-3-3 Breadth Requirement. The 6-3-3 requirement may be satisfied by any courses appropriate to the UCI 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 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 from colleges on the semester calendar may fulfill the 6-3-3 requirement by clusters of four courses and two courses, respectively (4-2-2). 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

Since school requirements (see p. 23) 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. 23 and departmental sections). Prospective transfer students should consult with their counselors as to the applicability of courses toward UCI departmental requirements.

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

ADDITIONAL POLICIES RELATING TO ADMISSIONS

Rules Governing Residence

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

Exemption from payment of the nonresident tuition fee is available to the unmarried minor (any person under 18) whose natural or adoptive parent is in the active military service of the United States and is stationed in California on the opening day of the quarter for which he registers, or is stationed outside the United States immediately after having been stationed on active duty in California. This waiver is also available to the spouse of a member of the military service of the United States with an active duty station as described above.

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

Medical and Physical Examinations

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

REGISTRATION PROCEDURES

Except where noted, all information applies to both undergraduate and graduate students. Additional information concerning registration and academic policies applying only to graduate students is given under the Graduate Division section.

REGISTRATION AND ENROLLMENT

Only after a student is officially admitted may he register for classes. To receive academic credit every student must complete the following procedure:

Consult academic advisor and secure approval for enrollment in classes if required; file completed class enrollment and information cards with the Registrar's Office; pay fees at the Cashier's Office (including all outstanding debts).

The Schedule of Courses is provided by the Registrar's Office with registration materials approximately six weeks before the beginning of each quarter. A quarterly calendar of registration and enrollment deadlines and the latest registration information are included in each issue. See page 65 for information on course load limits.

Class Verification and Identification Card

After payment of fees and enrollment in classes each student receives a Class Verification and Identification Card which is evidence that he is a registered student at UCI and which entitles him to library privileges, student health card, and other University privileges. In addition, the card provides identification for Associated Student functions. If the validated card is lost, a duplicate may be obtained from the Registrar's Office upon application and payment of $3 to the Cashier's Office.

Late Registration and Enrollment

Students who do not register (pay fees) and enroll in classes within the deadline limits, including those who are allowed to apply late, are required to pay a late registration and enrollment fee ($25). These fines are assessed to help pay for the additional expense associated with processing late transactions and may not be waived. All fees are due and payable in advance and must be paid in full before official enrollment in classes will be completed. Students are therefore urged to register (pay fees) and enroll within the published deadline dates. Students with financial need should make advance arrangements with the Financial Aids Office to have funds available when their fees are due.

Change of Class Enrollment

After an official Preferred Program card has been filed with the Registrar's Office, a student may add or drop courses or change sections of a course by executing a Change in Course Enrollment available from his academic dean's office.

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 enroll-

ment card from his dean's office and have it signed by his instructor. The student then returns the card to his dean's office. After the second week, no courses may be added or changed without the approval of the dean of the student's school.

To drop a course during the first six weeks of the quarter, it is necessary to obtain the instructor's signature and to file the change of course enrollment card with the dean's office. To drop a course after the sixth week, the dean's approval is needed, and will be given only to students not failing the course and not subject to academic disqualification. There is a $3 fee for adding or dropping a course after the second week.

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.

Each student is responsible for his official enrollment and must be officially enrolled in each class for which he expects credit, and he must officially drop classes he has ceased attending. The student cannot simply discontinue his attendance in a class; he *must* file a change in course enrollment card, or he will receive an "F" grade in the class.

BAR FROM REGISTRATION

A student may be barred from registering for classes for the following reasons:

Failure to respond to official notices; failure to settle financial obligation when due or to make satisfactory arrangements with the Business Office; failure to complete the physical examination; failure to present certification of degrees/status on leaving previous institution(s); failure to comply with admission conditions.

Each student who becomes subject to a "bar-from-registration action" is given advance notice and ample time to deal with the situation. However, if the student fails to respond, action will be taken without further notice, and he is entitled to no further services of the University except assistance toward reinstatement.

STUDENT RECORDS

Records are held in strict confidence and released only upon a student's specific written request except that public information such as the following is released (unless the student requests the information be withheld): periods of enrollment, degrees awarded, and addresses.

It is extremely important for each student to keep the Registrar's Office currently informed as changes occur to assure that accurate and complete records are maintained for his benefit. To facilitate this updating, a Personal Data Sheet is included in each term's registration packet which allows students to examine and update their personal data. Furthermore, after the drop and add period each quarter, every student is provided with a record of his current term enrollment to insure the accuracy of his official enrollment. Students are urged to officially report to the Registrar's Office all changes in personal data and enrollment data.

Transcript of Records

A fee is charged for each transcript of a student's record. Applications for a transcript of record should be submitted to the Registrar's Office several days in advance of the time needed. Transcripts will be released only upon signed request of the student; an application for a transcript *must* bear the student's signature.

SPECIAL PROCEDURES

Readmission: undergraduates only

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

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

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

Transcripts for work taken at other institutions must be submitted as part of the application. A nonrefundable fee of $20 is charged for each application for readmission. Remittance by bank draft or money order, payable to The Regents of the University of California, must be attached to the application.

Intercampus Transfer: undergraduates only

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

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. 68 under "Fees and Expenses.") If necessary, a student may mail his notice of withdrawal and his identification card to the Registrar's Office.

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

ACADEMIC POLICIES

GRADING

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)

I – Incomplete

P – Pass (equal to grade C or better)

NP – Not Pass

S – Satisfactory (graduate students only, equal to grade B or better)

U – Unsatisfactory (graduate students only)

J – Restricted to certain sequential courses, as approved by the Committee on Educational Policy, in which the final quarter grade of a multiquarter sequence course is assigned to the previous quarter(s) of the sequence.

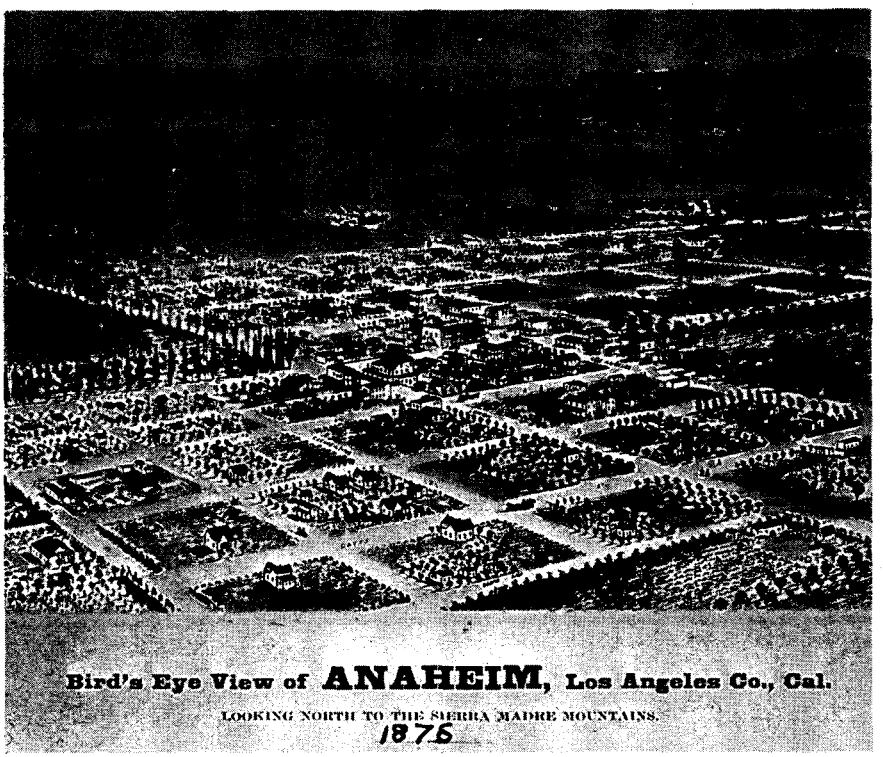
At the end of each quarter, the student is given a copy of his permanent record. On the copy, the student will find grades for all the quarters he has taken at UCI, a computation of his grade point average at the University of California, and a list of the University requirements he has completed (Subject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

It should be noted that final grades as reported by professors at UCI are permanent and final. A professor may not change a final grade except to correct a clerical error.

Incomplete Grades

"I" or incomplete grades are granted by a professor 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 for making up an incomplete grade. 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 that an undergraduate student 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.

J Grades

J is a continuing grade which is restricted to sequential courses which extend over two or more quarters, indicating that the final grade for the individual quarters will not be assigned until the last quarter of the sequence is completed. The grade for the final quarter is then assigned for all of the previous quarters of the sequence. No credit is given until the student has completed the entire sequence. J grades are restricted to certain sequential courses approved by the Committee on Educational Policy.

Pass/Not Pass

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

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

Satisfactory/Unsatisfactory: graduates 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.

NR (Not Reported) Grades

An "NR" (Not Reported) grade 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 since all "NR" grades turn to "F" grades after one quarter on the student's record.

Removal of Deficient Grades

Undergraduates may repeat courses only when grades of D, F, or NP were received. Degree credit for courses so repeated will be given only once but the grade assigned at each enrollment shall be permanently recorded. In computing the grade point average of an undergraduate with repeat courses, in which he received a D, F, or NP,

only the most recently received grades and grade points shall be used for the first 16 units repeated. In case of further repetitions, the grade point average shall be based on all grades assigned and on total units attempted.

Grade Points and Grade-Point Average

Grade points are assigned on a four point basis: A, 4 points per unit; B, 3 points per unit; C, 2 points per unit; D, 1 point per unit; F and I, zero points. Each undergraduate course counts 2-4 units, and graduate courses range from 1 to 12 units each (see departmental course descriptions). Grade-point average is computed by dividing the total number of grade points earned by the total unit value of courses attempted. P, NP, S, U, NR, and I grades are excluded in computing grade-point average.

CREDIT BY EXAMINATION

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

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

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

INDEPENDENT STUDY: UNDERGRADUATES ONLY

Another class option is available *primarily to upper-division students at UCI.* The option, independent study, allows the student to plan with his instructor a course having a clear relationship to the student's academic program. The plan for the course will include a reading list, a group of assignments, examinations, papers, or similar evidence of intellectual achievement on which academic credit will be based. A description of the course and of its requirements must be approved by the instructor responsible for it and by the department chairman or dean. Independent study credit for undergraduates is limited to five units per quarter.

FINAL EXAMINATIONS

Final examinations are obligatory in all undergraduate courses except laboratory courses, or their equivalent, as individually determined by the Committee on Educational Policy. Each such examination shall be conducted in writing, whenever practicable, and must be completed by all participants within the announced time shown in the Schedule of Courses for the quarter in question. These examinations may not exceed three hours duration. In laboratory courses, the department concerned may at its option require a final examination subject to prior announcement in the Schedule of Courses for the term.

Final grade reports from professors are due in the Registrar's Office within 48 hours after the final examination.

UNDERGRADUATE SCHOLARSHIP REQUIREMENTS

Course Load Limits

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 180 units 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.

Lineal progress toward completion of the 180 units required for graduation would imply that a student should complete 45 units during each of his four years. However, UCI regulations allow for the possibility of somewhat slower progress on the freshman level.

The Selective Service Office considers three academic courses (12 units) the minimum for a full-time student.

Good Standing

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. In addition, the student must complete a sufficient number of units to make progress toward graduation within twelve quarters. If a student does not maintain a 2.0 grade point average and earn a specific number of units 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 cumulative grade point average, is less than a 2.0. Additionally, if he does not maintain normal progress (at least 36 units by the end of freshman year, 80 by the end of sophomore year, 128 by the end of junior year and 180 by the end of senior year) he is subject to academic probation. A student will be allowed to continue on probation only if his record indicates that he is likely to achieve the required scholastic standing within a reasonable time.

Subject to Disqualification

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 cumulative grade point average of 2.0, is subject to disqualification. Additionally, a student who earns fewer than 25 units by the end of his freshman year, fewer than 73 by the end of his sophomore year, and fewer than 125 by the end of his junior year is subject to disqualification.

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

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

CONCURRENT ENROLLMENT

Concurrent enrollment in regular sessions at another institution or in University Extension while enrolled on the Irvine campus is permitted only when approved in advance by the dean of the student's school.

Street scene in Brea, 1918.

FEES AND EXPENSES

Estimated Expenses

The exact cost of attending the University of California, Irvine, will vary according to personal tastes and financial resources of the individual. 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. All fees are subject to change by action of the Regents.

California Residents	Undergrad.	Grad.	Medical
University Registration Fee	$300	$300	$300
Educational Fee	$300	$360	$360
Associated Student Fee	$21	$21	$21
Room and Board in University Residence Halls (Double Occupancy)	$1,285	----	----
Room and Board for Independent Students	----	$1,430	$1,430
Books and Supplies (Approximate)	$200	$400	$650
Personal Expenses (Laundry, Clothing, Recreation)	$500	$500	$500
Average Annual Expenses	$2,606	$3,011	$3,261
Nonresidents			
All above fees apply	$2,606	$3,011	$3,261
Nonresident Tuition	$1,500	$1,500	$1,500
Average Annual Expenses	$4,106	$4,511	$4,761

Fees

Registration Fee

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 (Statement of Intention to Register fee), required of new undergraduates, is applied to the full fee when the student registers. 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

The Educational Fee is $100 per quarter for undergraduate students and $120 per quarter for graduate students in 1972-73. Legal residents of the State of California

with demonstrated financial need may defer payment of the Educational Fee by accepting obligation to repay, at a later date, the sum deferred. Students interested in this provision should contact the Financial Aids Office, Room 1441, Library-Administration Building.

Associated Student Membership Fee

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

Tuition Fee

Students who are not legal residents of the State of California are required to pay a $500 quarterly tuition fee irrespective of the number of courses taken. (See Rules Governing Residence, p. 56.)

Miscellaneous Expenses, Fees, Fines, and Penalties

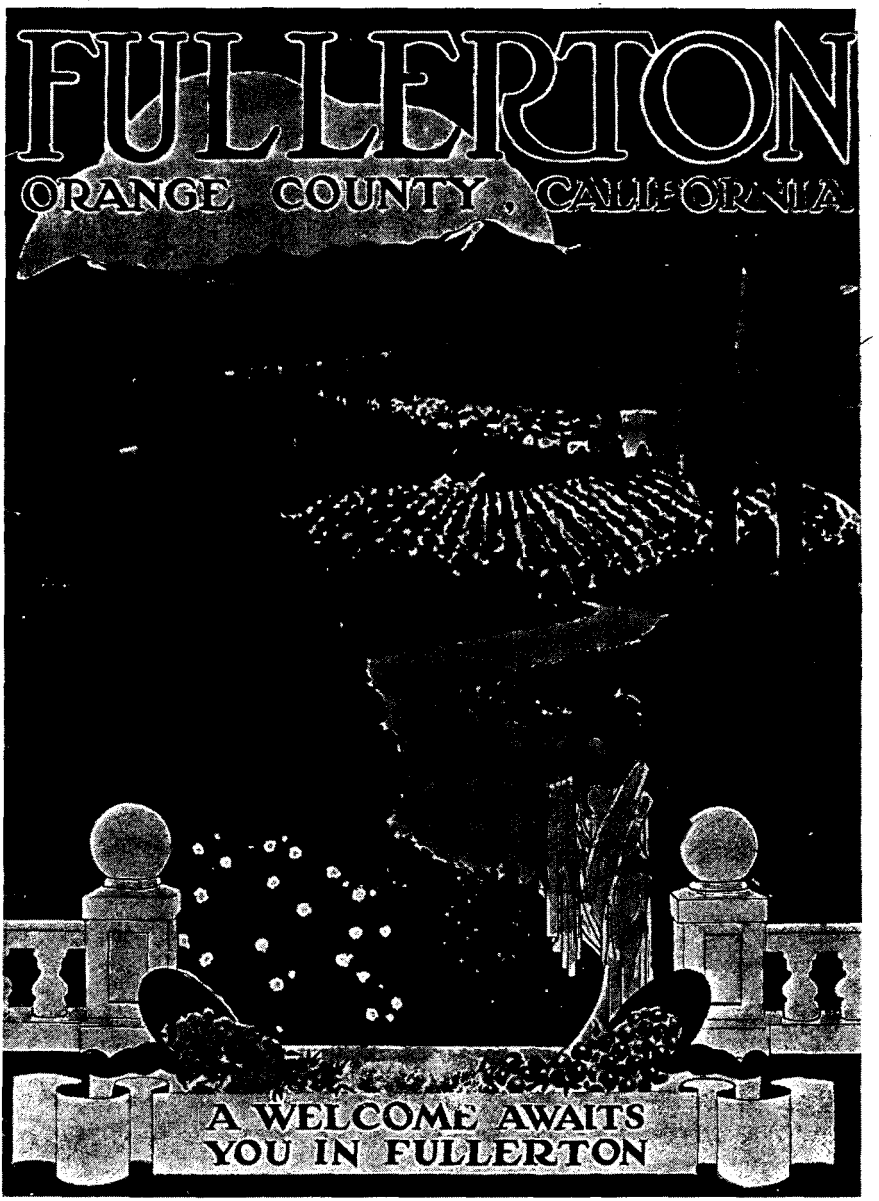
Statement of Intent to Register Fee (new undergraduates)	$50
Application Fee	20
Changes in Course Enrollment after announced dates	3
Duplicate Identification Card and/or other cards from enrollment packet	3
Duplicate Student Card	3
Duplicate Diploma (to replace destroyed diploma)	20
Special Course – Subject A	45
Advancement to Candidacy for Ph.D.	25
Master's Thesis and Doctoral Dissertation Filing Fee	50
Transcript of Record	2
Late Registration Fee (Enrollment and Payment of Fees)	25
Returned Check Collection	5
Parking Fee (Quarterly)	9

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 Statement of Intent to Register 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 the $50 nonrefundable Statement of Intent to Register fee, on the following basis, effective with the first day of instruction: 1-14 calendar days, 80% of amount paid; 15-21 calendar days, 60% of amount paid; 22-28 calendar days, 40% of amount paid; 29-35 calendar days, 20% of amount paid; 36 calendar 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's Office 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.



GRADUATE DIVISION

UC IRVINE - 1972-1973

The front and back covers of a descriptive booklet published by the Fullerton Chamber of Commerce in 1923, "offered for the information of those interested in Fullerton and the immediate vicinity."

GRADUATE DIVISION

Graduate study is a major aspect of the academic activity of the University of California, Irvine. Appropriate graduate degrees at the Master's and Doctor's levels, both those emphasizing the creative arts and creative scholarship and those emphasizing technical proficiency, are offered. See page 21 for a listing of degrees 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.

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. See school or department writeups for their specific requirements.

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 a minimum of one year of residence on the campus, a certain number of courses maintained at a B average, and an appropriate demonstration of achievement. Plan I includes course work, of which a certain amount 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 an examination covering a broader range of subject matter is administered. Opportunities for special preparation in teaching, as well as guided experience in actual teaching, will be offered by most departments. Other Master's Degrees, awarded for professional competence and often requiring more extended work, are also offered. School and departmental statements should be examined for details.

The Doctor of Philosophy

This degree is awarded on the basis of evidence that the recipient possesses knowledge of a broad field of learning and expert mastery of a particular sector of it. It is not a reward for diligence but an indication of critical judgment, synthetic understanding, and imaginative creativity. The dissertation is expected to demonstrate such abilities. Other Doctor's Degrees, marking professional attainment, and with correspondingly different emphasis, are also being offered. The M.D. is offered through the College of Medicine.

The candidate for the doctorate is expected to be in full-time residence on the campus for two years. Three to five years of full-time academic work beyond the Bachelor's Degree is normally required to complete the degree. During the first year or two of graduate work, the student is normally guided by a departmental advisor. When judged ready by the department, often aided by preparatory examinations,

the student is encouraged to qualify for candidacy for the Doctor's Degree. At this time, a committee is appointed by the Dean of the Graduate Division, and it henceforth supervises his graduate program.

GRADUATE ADMISSIONS

Admission to the Graduate Division is by the Dean of the Graduate Division 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

Students seeking admission to graduate status at the University of California must hold a bachelor's degree or its equivalent from an institution of acceptable standing. The program of preparation should be substantially equivalent, both in the distribution of academic subject matter and in scholarship achievement, to the requirements for a comparable degree at the University of California. The Dean of the Graduate Division and the school or department of specialization evaluate applications and formal preparation for the graduate field of study with specific reference to the previous college record, letters of recommendation, and the results of the Graduate Record Examination or like indicators of achievement in graduate work. Normally, only students working toward a higher degree can be admitted. Exceptions are students working toward California Teaching Credentials.

When to Apply

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, November 1 for the winter quarter, and January 1 for the spring quarter. Although these are official deadlines, applications normally should be submitted well in advance of these dates, particularly in the case of students desiring financial assistance. The application deadline for financial aid is February 1.

How to Apply

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 should 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. Undergraduates at UCI may have two copies of their complete undergraduate record sent to graduate admissions. 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 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. Individual departments may have special requirements for admission to graduate status.

The application must be accompanied by a $20 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 an additional late registration fee. In cases where students have work in progress by the deadline dates given above, final transcripts covering such work must be received before registration can be permitted. Applications of such students will be considered on an individual basis and special late registration dates may be assigned.

Notification

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

Readmission

A student who is absent for one quarter or more must file an Application for Readmission which may be obtained from the Office of Graduate Admissions. A fee of $20.00 must accompany the application. This application is subject to the approval of the student's major department and the Dean of the Graduate Division.

Admission for Foreign Students

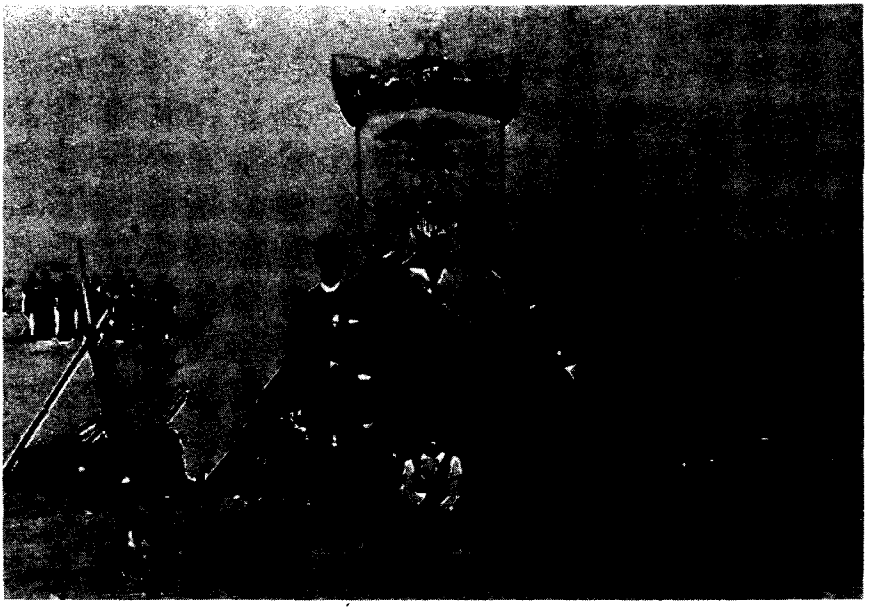
Foreign students are held to the same regulations affecting admission and candidacy as are students from the United States. As it normally takes much longer to obtain credentials and process foreign applications, foreign students are urged to apply at least six months prior to the deadline dates. Every foreign student from a non-English speaking country must take the TOEFL (Testing of English as a Foreign Language) Examination. Further information on this requirement and other provisions for foreign students may be obtained on request from the Office of Graduate Admissions.

Limited Status

Under certain conditions students holding a Bachelor's Degree are permitted to register in Limited Status in order to pursue various educational objectives. Although Limited Status is an undergraduate classification, only those applicants who have applied to the Graduate Division and were subsequently recommended for Limited Status may register in this category. Such students may enroll in graduate courses only by special arrangement and under no circumstances will credit earned in Limited Status be counted toward a graduate degree. Furthermore, a student who has been refused admission to the Graduate Division on the basis of a low scholastic record cannot use his record in Limited Status to improve his grade-point average and thereby qualify for graduate status.

Intercampus Exchange Program for Graduate Students

A graduate student registered on any campus of the University who wishes to take advantage of educational opportunities available only at another campus of the University may, with the approval of his advisor and the Dean of the Graduate Division of his home campus and with approval of the Dean of the Graduate Division on the campus visited, become an intercampus Exchange Graduate Student for one



Encampment of the Malvern Hill Post, Grand Army of the Republic, of Anaheim, at Anaheim Landing in 1887.

or more quarters. This program will also include those students who take courses on more than one campus of the University in the same quarter.

Application forms for the Intercampus Exchange Program for Graduate Students may be obtained from the Office of the Dean of the Graduate Division on the student's home campus.

REGISTRATION

For general registration requirements, see pages 58-60. The following requirements apply to graduate students only.

Every graduate student in good standing, unless granted a formal leave of absence or honorable dismissal by the Dean of the Graduate Division, will be required to register with the Registrar of his campus each quarter until the completion of all requirements for the degree or credential for which he is working. Failure to register or to obtain formal permission to leave the University will constitute presumptive evidence that a student has withdrawn from the Graduate Division. No graduate student should fail to register for any quarter without first obtaining the leave appropriate to his situation. In case of doubt, the student should seek advice from the Graduate Division.

The regulations pertaining to candidates for higher degrees are as follows:

1. If the student plans to be in residence on the campus, he must register as a regular student.
2. Even if the student plans to be away from the campus during the quarter, but in

correspondence with his department and in an instructional relationship with his advisors, he must register as a regular student.

3. If the student plans to be away from the campus for a specific period of time, and to have no connection with the University during that specific period, he must apply for a leave of absence.

4. Candidates for the Master's Degree or Doctorate who have completed all degree requirements including the residence requirements, and who are taking no further work in resident courses or in research may, if they are engaged in writing the thesis or dissertation or in preparing for the final examination, register for thesis or examination only.

ACADEMIC POLICIES

Continuous Registration

A candidate for a higher degree is required to register each quarter until all degree requirements are fulfilled (including the thesis or dissertation and final examination). Unless granted an official leave of absence, a graduate student who does not officially register for a quarter will be considered to have withdrawn from the University. If a student leaves the University within a term, he must obtain official approval to withdraw or he will receive nonpassing grades for all courses for which he is enrolled.

Academic Residence

A graduate student is considered to be in academic residence in order to satisfy the minimum residence requirement for any higher degree or certificate issued by the University, if he is registered for and completes a minimum of one course (four quarter units or the equivalent) in graduate or upper-division work during any regular University term. Waiver of residence requirements will be at the discretion of the Dean of the Graduate Division.

Leave of Absence

A leave of absence may be granted only if a student has completed a minimum of one quarter with at least a B average. Leaves are normally granted for not more than one year and must be approved by the academic department and the Graduate Division. Students who are on leave may not make use of University facilities and may not place demands upon the faculty. Forms are available in the Graduate Division.

Standard of Scholarship

All graduate students are expected to maintain at least a B average in all courses applicable to advanced degrees.

Transfer of Credit

Under certain conditions up to one-fifth of the minimum course requirement for the Master's Degree may be allowed for work taken in graduate status at another institution of high standing. (This does not apply to another branch of the University of California.) Please refer to your departmental requirements for the particular minimum course requirement in your area.

Summer Session

Credit from the Summer Session may be obtained by students who have been admitted to the Graduate Division.

FINANCIAL AIDS FOR GRADUATE STUDENTS

In order to be eligible for any graduate fellowship, assistantship, or traineeship, the applicant must have demonstrated superior scholastic ability and must have been approved for admission as a graduate student on the Irvine campus of the University, or must be a currently enrolled graduate student at UCI. The acceptance of a graduate fellowship or scholarship presumes that the recipient will devote himself to a full-time study and research program. Any exceptions must be approved by the Dean of the Graduate Division in advance. It is strongly recommended that all applicants for scholarships, fellowships, and traineeships take the Graduate Record Examination. Applications for national competition fellowship programs must be submitted directly to the agency involved on their own application forms. Application for fellowship awards administered by UCI (as listed in a detailed brochure, available on request) should be submitted on the Application for Graduate Support form. Applications for loans, work-study, or University Grants-in-Aid can be obtained from the Office of Financial Aids.

The Application for Graduate Support should be made concurrently, approximately 9 to 12 months prior to the effective date of admission and/or support. Deadline for submission is February 1 for awards commencing the following fall. Please note that most scholarship awards are made for the academic year, while most federal fellowships are tenable for a full year, should the recipient and this institution determine that this is beneficial for his proposed program of study.

The University of California, Irvine, does not send out notification of non-service awards until April 1 (preceding the fall quarter). These awards must be firmly accepted or declined, in writing, by April 15.

Teaching and Research Assistantships

In addition to fellowships and traineeships, there are Teaching and Research Assistantships available in most departments with stipends for half-time employment of a Teaching Assistant (an academic year appointment) of approximately $3,400 and of a Research Assistant (if an 11-month appointment) of approximately $3,600. Applicants for these appointments should contact the chairman of the department in which appointment is sought.

Nonacademic Employment

Students interested in nonacademic employment should contact the Office of Financial Aids, 1441 Library-Administration Building, UC Irvine.

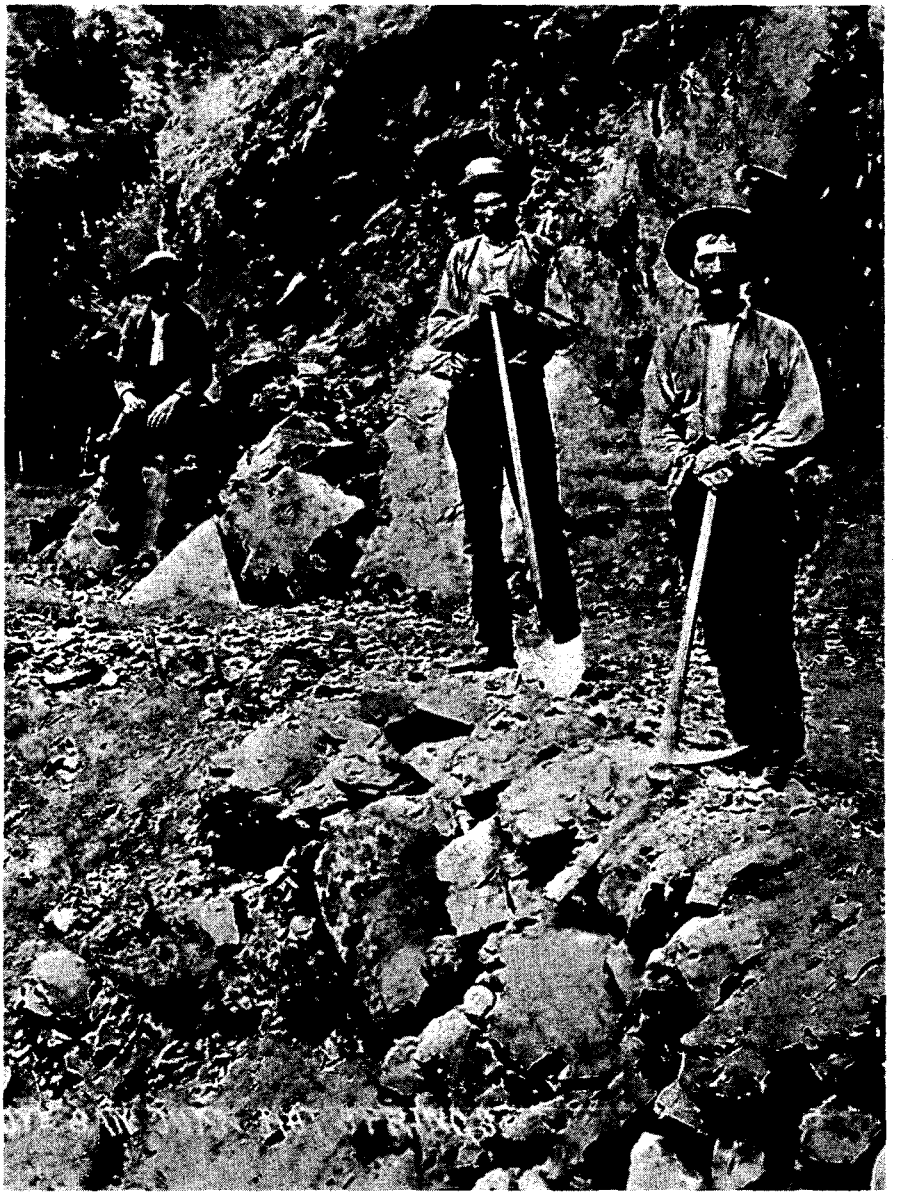
Graduate Loans

The National Defense Student Loan Program provides loans for graduate students pursuing a full-time program of study. Prospective as well as enrolled students may apply through the Office of Financial Aids, 1441 Library-Administration Building.

University Grant-in-Aid Program

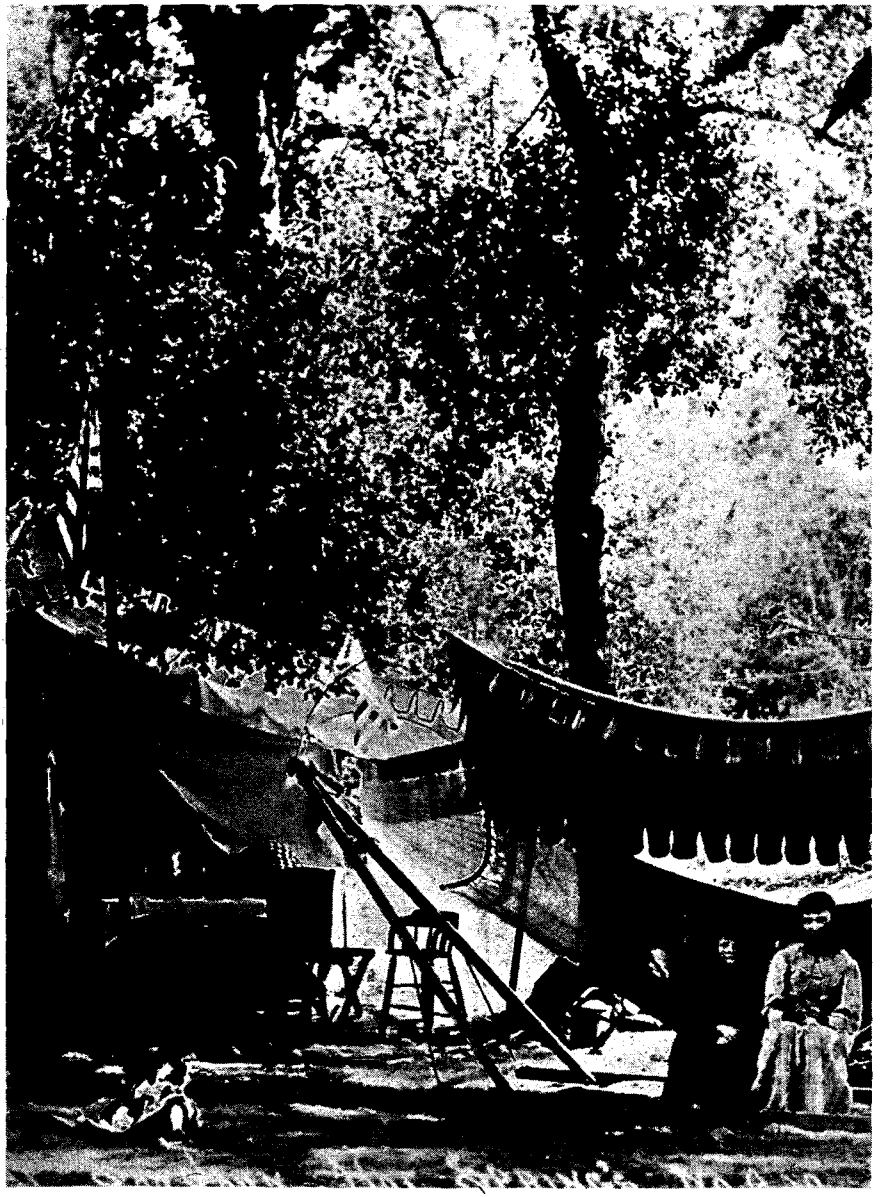
The University Grant-in-Aid Program is a program of assistance for students with a demonstrable financial need. Information and application forms can be obtained from the Office of Financial Aids, 1441 Library-Administration Building.

A detailed list of available fellowships and scholarships will be included in your application packet or you may obtain this information by writing to Graduate Admissions.



SCHOOLS AND DEPARTMENTS

UC IRVINE - 1972-1973



Front: Laborers building the Morrow Trail.

Back: Professor Norton's tent at the San Juan Hot Springs, around 1890. This resort, locate near the top of Ortega Highway (formerly the Morrow Trail), was the most popular spa in th area for about 100 years.

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. 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. 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 undergraduate program of the School serves both as a preprofessional major for students planning careers in the biological and biomedical sciences and as a liberal arts major for an increasing number of students who seek a scientific education. The program is designed to provide a broad academic base suitable for many careers. Graduates have found their way into a number of professions including biological and biomedical research, teaching, medicine and its allied health fields, and law. It is a rigorous and rewarding program which requires a serious commitment from the student. It can also help him discover his capabilities.

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 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. Introductory courses for nonmajors are designed to make the biological sciences meaningful and interesting and to inform intelligent citizens of biological phenomena that affect their daily lives. Graduate courses are offered in all the departments.

Special research resources administered by the School of Biological Sciences include the following: Museum of Systematic Biology, a teaching and research facility which presently contains material on local populations of fishes, plants, insects, and mammals; Center for Pathobiology, an information unit devoted to the study of abnormal and normal development and the application of the results of such studies to pest control and pollution; 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 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 further information on 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, is available in the Biological Sciences Office of Student Affairs in Room 335, Steinhaus Hall.

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

Advisors and Advising Systems

The Biological Sciences Student Affairs Office coordinates the advising program which is divided into two areas: program checking and career planning. The former is handled in the Student Affairs Office and the latter by individual faculty members. An advisor is assigned to each student when he enters the School. Advisors are happy to discuss programs, goals, ambitions, and problems with their advisees. If a student's interests change, or if he wishes to change his advisor for any reason, he should not be hesitant about making this step. It can be arranged by making a request in the Biological Sciences Student Affairs Office.

Students must have their advisors' signatures on approval cards by the first week of classes or the computer will automatically cancel all of their classes.

Research Enrichment Program

The REP is open to highly qualified freshmen and sophomores who are planning a career in either health or life science research. The program offers the students special seminars, training in general biological laboratory techniques, and the opportunity to conduct original research and discuss their research with their peers and research advisors. It is expected that every student will broaden his scientific experience by attending either a research institute during one summer or another UC campus for one quarter. Admission into the program will be based on the quality of a written essay, overall academic record, and an interview.

Degrees Offered in the School

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

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

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

An annual Edward A. Steinhaus Award is given each spring to an outstanding graduate teaching assistant to be chosen by a committee composed of undergraduate students, faculty members, representatives from the administration, and Mrs. Steinhaus.

Requirements for the Bachelor of Science Degree

University Requirements: See page 22.

School Requirements: Biological Sciences Core Curriculum (101A-B-C-D-E-F-G, 102A-B-C-D-E-F); minimum of three satellite courses; Chemistry 1A-B-C; Chemistry 51A-B-C; Humanities 1A-B-C; Mathematics 2A-B-C; Physics 3A-B-C or 5A-B-C.

Planning a Program of Study

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

Breadth requirements are: six courses in a school or program outside of the biological sciences major (this is more than covered by the 12 required courses in chemistry, mathematics, and physics in the School of Physical Sciences); three courses in any of the following areas, and three courses in a second area: Administration, Comparative Culture, Engineering, Fine Arts, Humanities, Information and Computer Science, Social Ecology, and Social Sciences.

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.

In addition, the ability to read literature of science in French, German, Russian, or Spanish is desirable.

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

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

for students interested in a career in Environmental Management. Details are given under the School of Engineering, page 261.

Consult with the Biological Sciences Student Affairs Office for advice on planning a program.

Sample Programs

All courses in boldface are required of majors; others are highly recommended.

OPTIONS	OPTION A Fast Progress	OPTION B Fast Progress	OPTION C Fast Progress but Humanities Postponed Until Junior Year	OPTION D Lighter Freshman Year
FRESHMAN	**Gen. Chem. 1** **Math 2 (Calculus)** **Bio. 101 & 102 A-B-C** **Humanities 1**	**Gen. Chem. 1** **Math 2 (Calculus)** **Bio. 101 & 102 A-B-C** *Electives	**Gen. Chem. 1** **Math 2 (Calculus)** **Bio. 101 & 102 A-B-C**	**Gen. Chem. 1** **Math 2 (Calculus)** **Humanities 1**
SOPHOMORE	**Org. Chem. 51** **Physics 3 or 5** **Bio. 101, 102 & Satellites** *Electives	**Org. Chem. 51** **Physics 3 or 5** **Bio. 101, 102 & Satellites** **Humanities 1**	**Org. Chem. 51** **Physics 3 or 5** **Bio. 101, 102 & Satellites** *Electives	**Org. Chem. 51** **Bio. 101 & 102 A-B-C** **Physics 3 or 5** *Electives
JUNIOR	**Bio. 101, 102 & Satellites** Phys. Chem. 131 A-B; Bio. 123 Math 170 A-B (Statistics) and ICS 1 (Computer) or Math 3 *Electives	Same as Option A	**Humanities 1** **Bio. 101, 102 & Satellites** Math 170 A-B (Statistics) and ICS 1 (Computer) or Math 3 *Electives	Same as Option C
SENIOR	*Electives " " "	Same as Option A	Phys. Chem. 131 A-B; Bio. 123 *Electives " "	**Bio. 101, 102 & Satellites** Phys. Chem. 131 A-B; Bio. 123 *Electives

*It is highly recommended that one or more quarters of the freshman, sophomore, and junior year seminars be taken (Bio. 2, 1 unit; Bio. 55, 2 units; Bio. 190, 2 units). Other electives should be chosen with a view to fulfilling breadth requirements of the School of Biological Sciences. Premedical, predental, and other paramedical students should choose electives in psychology, possibly a foreign language, quantitative analysis, physical chemistry, or other specific courses recommended by graduate and medical schools. Students planning a career in elementary or secondary teaching may choose electives among education courses in their junior and senior years.

See Planning a Program of Study for School of Biological Sciences breadth requirements.

GRADUATE PROGRAMS

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

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

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

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

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

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

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

Graduate education is a highly personal and individual matter. Graduate students are encouraged to pursue their own individual interests and creative abilities.

Master of Arts in Teaching of Biology

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

Master of Science in the Biological Sciences

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. For specific graduate programs, contact the graduate advisors of the various departments.

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

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

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

SCHOOL OF BIOLOGICAL SCIENCES FACULTY

Howard A. Schneiderman, Ph.D. Harvard University, *Dean of the School of Biological Sciences, Chairman of the Department of Developmental and Cell Biology, Director of Center for Pathobiology, Professor of Biological Sciences*

Patrick L. Healey, Ph.D. University of California, Berkeley, *Associate Dean, Assistant Professor of Biological Sciences*

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

Stuart M. Arfin, Ph.D. Yeshiva University, Albert Einstein College of Medicine, *Assistant Professor of Biochemistry*

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

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

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

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

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

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

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

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

Jeffrey L. Clark, Ph.D. University of Chicago, *Assistant Professor of Biochemistry*

Carl Cotman, Ph.D. Indiana University, *Associate Professor of Psychobiology*
Dennis D. Cunningham, Ph.D. University of Chicago, *Assistant Professor of Microbiology*
Peter S. Dixon, Ph.D. University of Manchester, *Director of Museum of Systematic Biology, Professor of Biological Sciences*
Donald E. Fosket, Ph.D. University of Idaho, *Associate 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 A. Giolli, Ph.D. University of California, Berkeley, *Associate Professor of Psychobiology and Human Morphology*
Albert Globus, M.D. Northwestern University, *Assistant Professor of Psychobiology and Human Morphology*
Charles N. Gordon, Ph.D. New York University, *Assistant Professor of Biochemistry*
Gale A. Granger, Ph.D. University of Washington, *Associate Professor of Biochemistry*
Noelle A. Granger, Ph.D. Case Western Reserve University, *Lecturer in Biological Sciences*
Peter F. Hall, Ph.D. University of Utah, M.D. University of Sydney, *Professor of Reproductive Physiology*
Wesley Hatfield, Ph.D. Purdue University, *Assistant Professor of Microbiology*
George L. Hunt, Ph.D. Harvard University, *Assistant Professor of Biological Sciences*
Kenneth H. Ibsen, Ph.D. University of California, Los Angeles, *Assistant Professor of Biochemistry*
E. Marshall Johnson, Ph.D. University of California, Berkeley, *Professor of Anatomical Sciences*
Robert K. Josephson, Ph.D. University of California, Los Angeles, *Professor of Biological Sciences and Psychobiology*
Keith E. Justice, Ph.D. University of Arizona, *Associate Professor of Biological Sciences*
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, Associate Professor of Biological Sciences* (on leave 1972-73)
Howard M. Lenhoff, Ph.D. The Johns Hopkins University, *Dean of the Graduate Division, Professor of Biological Sciences, and Coordinator of Marine Biology Program*
Mark M. Littler, Ph.D. University of Hawaii, *Assistant Professor of Biological Sciences*
Gary Stephen Lynch, Ph.D. Princeton University, *Assistant Professor of Psychobiology*
Richard E. MacMillen, Ph.D. University of California, Los Angeles, *Chairman of the Department of Population and Environmental Biology, Associate Professor of Biological Sciences*
Gordon S. Marsh, B.S. University of California, Berkeley, *Lecturer in Biological Sciences*
James L. McGaugh, Ph.D. University of California, Berkeley, *Chairman of Department of Psychobiology, Professor of Psychobiology and Psychiatry and Human Behavior*

Calvin S. McLaughlin, Ph.D. Massachusetts Institute of Technology, *Associate Professor of Biochemistry*
Kivie Moldave, Ph.D. University of Southern California, *Chairman of Functional Correlates A, Professor of Biochemistry*
Harris S. Moyed, Ph.D. University of Pennsylvania, *Chairman of Environmental Interactions, Professor of Microbiology*
Ernest P. Noble, Ph.D. Oregon State University, M.D. Case Western Reserve, *Professor of Psychobiology, Psychiatry and Human Behavior, Medical Pharmacology and Therapeutics*
Rosevelt L. Pardy, Ph.D. University of Arizona, *Lecturer in Biological Sciences*
Dennis Piszkiewicz, Ph.D. University of California, Santa Barbara, *Assistant Professor of Biochemistry*
Donald J. Raidt, Ph.D. University of Kansas, *Assistant Professor of Microbiology*
Philip W. Rundel, Ph.D. Duke University, *Assistant Professor of Biological Sciences*
Gerold A. Schubiger, Ph.D. University of Zurich, *Lecturer in Biological Sciences*
Roger R. 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*
Arnold Starr, M.D. New York University, *Associate Professor of Psychobiology and Medicine*
Grover C. Stephens, Ph.D. Northwestern University, *Professor of Biological Sciences*
Betsy M. Sutherland, Ph.D. University of Tennessee, *Assistant Professor of Molecular Biology*
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*
Richard F. Thompson, Ph.D. University of Wisconsin, *Professor of Psychobiology and Psychiatry and Human Behavior*
Marcel Verzeano, M.D. University of Pisa Medical School, *Professor of Psychobiology*
Ernest R. Vyse, Ph.D. University of Alberta, *Lecturer in Biological Sciences*
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, Professor of Biochemistry*
Jack C. Waymire, Ph.D. Ohio State University, *Assistant Professor of Psychobiology*
Norman M. Weinberger, Ph.D. Western Reserve University, *Associate Professor of Psychobiology*
Richard E. Whalen, Ph.D. Yale University, *Professor of Psychobiology*
Clifford A. Woolfolk, Ph.D. University of Washington, *Associate Professor of Microbiology*
Daniel L. Wulff, Ph.D. California Institute of Technology, *Associate Professor of Biochemistry*

UNDERGRADUATE COURSES IN BIOLOGICAL SCIENCES

Courses for Nonmajors Only

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

1A-B-C Introductory General Biology
Lecture and laboratory. Introduces general framework of biology and its underlying philos-

ophy, with attention to its impact on human affairs.

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

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

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

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

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

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

Courses for Both Majors and Nonmajors

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

146 Problems in Population Biology (1) W
Lecture and seminar. Examination of selected areas in ecology, the stability of ecosystems, species diversity, and population regulation. Students will prepare summaries of the literature for class presentation. Prerequisite: Consent of instructor.

150 Horticultural Sciences (1-1) F, S
Lecture, laboratory, field. Theory and practice of plant culture. Basic aspects of plant structure and function, soil science, plant pathology, plant pests and irrigation, and the applied aspects of horticulture. Plant cultivation in a garden plot.

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

157 Biology of Seed Plants (1-1) W, Summer
Lecture and demonstration. Flowering plants considered in terms of their structure and function. These will be related to their roles in ecology and human needs.

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

I08 Co-Core – Special Topics in Biological Sciences (1-1-1) F, W, S
Lectures by eminent scientists and discussions on subjects relating to the basic current issues in biological sciences. Topics will vary from year to year.

I10 Human Reproduction and Sexual Behavior (1) Summer
Lecture. Consideration of anatomy, physiology, and behavior as related to sexual reproduction, including fertility, pregnancy, childbirth, birth control, homosexuality, venereal diseases, sex education, sexual intercourse and response.

I11 Biology and Public Policy (1) S
Lecture and discussion. Relation between biology and biological scientists and the formulation and execution of public policies. Topics such as population, delivery of health care, pollution. Prerequisite: One year of biology or one year of social science or consent of instructor.

Core Curriculum

Biological Sciences Lectures 101A-B-C-D-E-F-G and Laboratories 102A-B-C-D-E-F required of all biological sciences majors. Exception: Transfer students, who have successfully completed one or more years of college biology, should consult with our Student Affairs Office for possible exemption from the first year of our Core. Lectures: Three one-hour per week. Laboratories: One three-hour per week. Each Core lab may be taken concurrently or following completion of lecture portion.

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

101B (formerly 100A) Cell Structure and Function (1) W
Introduction to cell structure and function: cell ultrastructure, protein chemistry, enzymes, metabolism, photosynthesis, muscle contraction, permeability, membranes, and molecular genetics. Prerequisite: Biological Sciences 101A.

101C (formerly 100B) Developmental Biology and Organ Physiology (1) S
Lecture. Mechanisms and concepts of development, organization of the basic body plan in animals, and processes of growth and differentiation in plants. Analysis of the origin, differentiation, and adult structure of various organ systems. Reproductive physiology of vertebrates. Homeostasis in physiological systems. Systems to be discussed include temperature control, osmoregulation digestion, muscle physiology. Prerequisite: Biological Sciences 101B.

101D (formerly 100C) Psychobiology (1) F
Lecture. Neurobiological bases of behavior: aspects of the physiology, chemistry, anatomy, and evolution of the central nervous system underlying basic behavioral processes. Prerequisite: Biological Sciences 101C.

101E (formerly 100D) Ecology (1-1) F, W
Lecture. Basic ecological principles and their relevances at the several levels of organization: individuals, populations, communities, and ecosystems; interactions of these levels with the physical and biotic environments. Prerequisite: Biological Sciences 101C.

101F (formerly 100E) Biochemistry (1-1) W, S, and
101G (formerly 100F) Molecular Biology (1) S
Lectures. These two quarters form a continuous sequence covering modern biochemistry and molecular biology. Structure and properties of proteins; major biochemical pathways and the mechanisms for their control; biochemistry and replication of nucleic acids; molecular genetics; protein biosynthesis; genetic code; regulation of expression of genetic information. Prerequisite for 100F: Completion of or concurrent enrollment in Chemistry 51B. Prerequisite for 101G: Biological Sciences 101F.

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

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

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

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

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

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

02G Molecular Biology Laboratory (¼) Elective – not required for Core
xperiments on enzymatic synthesis of polynucleotides and their use as messengers in pro-
ein biosynthesis to demonstrate the nature of the genetic code. Prerequisite: Concurrent
nrollment in or completion of Biological Sciences 101G. (Not offered in 1972-73.)

atellite Courses

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

13 Pleistocene Environments (1) W every third year beginning 1975
Lecture and discussion. Review of the environmental factors during late Tertiary and Pleistocene times. Surveys geological, climatological, and biotic features of these environments. Prerequisites: Biological Sciences 166 and consent of instructor.

14 Urban Ecosystems (1) W every third year beginning 1974
Lecture. Evolution of human settlement patterns and their environmental interactions. The development of educational, communication, transport, recreational, and other systems and their fundamental behavioral bases. Prerequisites: Biological Sciences 166 and consent of instructor.

15 Hominid Evolution (1) W every third year beginning 1973
Lecture. A review of the evolution of the genus *Homo* from its primate origins to the appearance of *H. sapiens*. Includes a survey of ancestral primate, hominoid and hominid features, evolution of communication, cooperation, culture, and other social behavioral patterns. Prerequisites: Biological Sciences 166 and consent of instructor.

21 Immunology (1) F
Lecture. Host immune response (bacterial viral, tumors, and transplantation), structure and function of antibody molecules: important current theories. Prerequisite: Biological Sciences 101F.

22 General Microbiology (1) F
Lecture, discussion. Comparative metabolism of small molecules and cell structure and relationship to microbial classification. Macromolecule synthesis and regulation, sporulation, cell division, growth, and effect of antibiotics. Prerequisite: Biological Sciences 101F.

22L General Microbiology Laboratory (1) F
Isolation of organisms of desired biochemical characteristics; exploitation for use in industrial, medical, and biochemical application. Prerequisite: Concurrent enrollment in Biological Sciences 122.

23 Biophysical Chemistry (1) S
Lecture. Physical chemistry of macromolecules; methods for investigation of size, conformation, structure, and solution properties of proteins and nucleic acids. Prerequisites: Chemistry 131A-B.

24 Virology (1) F
Lecture. Infective cycle, growth, reproduction, and host interrelationships of animal viruses. Animal viruses in relation to basic problems in molecular biology. Prerequisite: Biological Sciences 101G; genetics recommended.

24L Virology Laboratory (½) F
Selected students may participate in the laboratory portion of Biological Sciences 124.

25 Biochemical Methodology (1¼) F
Lectures and demonstrations of methods employed in molecular biology, particularly centrifugation, radioactivity measurement, and fractionation methods. Prerequisite: Biochemistry equivalent to Biological Sciences 101F-G.

26A-B Biochemistry (1¼-1¼) F, W
Lecture. Structure and function of proteins and nucleic acids; basic aspects of enzymes as proteins; biosynthesis of macromolecules. Prerequisites: Biological Sciences 101F-G; organic chemistry.

128 Molecular Genetics (1¼) S
Lecture. Molecular genetics; coding; control mechanisms in replication, transcription, and translation. Prerequisites: Biological Sciences 126A-B or general background in biological sciences and physical chemistry.

129 Biogenesis of Cell Organelles (1) S of even years
Lecture. Study of cell structures such as nuclei, chloroplasts, mitochondria, ribosomes, and membranes. Prerequisite: Biochemistry equivalent to Biological Sciences 101F-G.

130 Biosynthesis of Nucleic Acids (1) S of odd years
Lecture. Structure, function, and replication of DNA and RNA in procaryotes and eucaryotes; emphasis on current research. Prerequisites: Biological Sciences 100F-G.

132 Comparative Plant Morphology (1) W
Lecture. Forms, structures, and functions of vegetative and reproductive aspects of algae, fungi, bryophytes, and vascular plants. Prerequisites: Biological Sciences 101B-C-D or consent of instructor.

132L Comparative Plant Morphology Laboratory (¼) W
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 132.

133 Sensory Physiology (1) S
Lecture. Physiology and function of sense organs. Emphasis on transduction at the cellular level. Prerequisite: Consent of instructor.

133L Sensory Physiology Laboratory (¼) S
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 133.

134 Plant Physiology (1) S
Lecture. Hormonal and autotrophic aspects of physiology: hormones; environmental stimuli; photosynthesis and translocation. Prerequisite: Consent of instructor.

134L Plant Physiology Laboratory (¼) S
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 134.

135 Physical Chemical Aspects of Biological Function (1) F
Lecture. Physical chemistry for biology students. Previous physical chemistry not required. Prerequisite: Biological Sciences 101F.

136 Developmental Biology (1) S
Lecture. Genic, environmental, and biochemical aspects of animal and plant development. Analysis of polarity, symmetry, differentiation, regeneration, cell movements, hormone activity, genic control, and abnormal growth in development of plants and animals. Prerequisite: Biological Sciences 144.

137A-B-C Genetics (1-1-1) F, W, S
Lecture. Covers both procaryotic and eucaryotic systems. Emphasis is placed on regulatory mechanisms and developmental genetics. Prerequisite: Biological Sciences 101C.

137L Genetics Laboratory (¼) W
Prerequisite: Concurrent enrollment in Biological Sciences 137B.

138 Comparative Animal Physiology (1) F
Lecture. Maintenance aspects of physiology: water balance; feeding and digestion, metabolism; respiration and circulation. Prerequisite: Consent of instructor.

138L Comparative Animal Physiology Laboratory (¼) F
Prerequisite: Concurrent enrollment in or completion of Biological Sciences 138.

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

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

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

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

145 **Principles of Regeneration** (1) W of odd years
Problems concerning the developmental restoration of body parts in invertebrate and vertebrate animals. Prerequisite: Biological Sciences 136.

146 **Problems in Plant Development** (1-1-1) F, W, S
Basic problems in the molecular, genetic, and morphogenetic control of plant development. Prerequisite: Biological Sciences 136.

147 **Plant Morphogenesis** (1) F
Utilization of current literature, with demonstrations of the origins, micro and ultrastructure development of the plant. Theoretical considerations of genic and environmental factors in development stressed. Prerequisite: Biological Sciences 136.

148 **Vertebrate Embryology** (1¼) W
Lecture, laboratory. Introduction to the study of animal development through organogenesis with emphasis on the vertebrates. Prerequisite: Introductory course in biological sciences.

149 **Insect Development** (1) S
Lecture. Insects as providing ideal experimental situations for analyzing major problems of developmental biology. In depth exploration of interrelationship of problems. Prerequisite: Consent of instructor.

155 **Seminar in Psychobiology** (1-1-1) F, W, S
Consideration of selected current research problems concerning neurobiology and behavior. Students will prepare and present papers. Prerequisites: Biological Sciences 15 or 101D and consent of instructor.

156 **Neural Systems** (1) W of even years
Lecture, discussion. Detailed neuroanatomical, neurochemical, and neurophysiological analysis of selected mammalian brain systems. Prerequisite: Biological Sciences 101D.

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

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

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

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

161 **Cellular Neurobiology** (1) W
Lecture, discussion. Introduction to the biophysics and biochemistry of nerve cells emphasizing membrane potentials, conduction and transmission, synaptic chemistry, and information processing. Prerequisite: Biological Sciences 101F.

162 **Synaptic Mechanisms** (1) W of odd years
Lecture, laboratory. New concepts and current literature in the developing areas of synapse function. Prerequisite: Biological Sciences 161 or consent of instructor.

163 **Psychoneuroendocrinology** (1) S of even years
Lecture, discussion. Introduction to materials showing that hormones are involved in neural

development and mature function and behavior and that behavior is involved in the control of hormonal secretions. Prerequisite: Biological Sciences 101D.

164 Neuroanatomy (1) F
Lecture, discussion, demonstrations. Introduction to comparative neuroanatomy emphasizing the mammalian central nervous system. Prerequisite: Biological Sciences 101D.

165 Population Ecology (1) F
Lecture. Growth and regulation of plant and animal populations, extrinsic and intrinsic factors, competitive and predator/prey interactions, factors in spatial distribution, genetic interactions, computer modeling of population phenomena. Prerequisites: Biological Sciences 101E and one year of calculus.

166 Human Ecology (1) W
Lecture, discussion, seminar. Multi-media course. Consideration of demographic features, intrinsic rate of increase, and carrying capacity. Encompasses effects of human populations on their environment, and also of environment on human populations, settlement patterns, and societal evolution. Prerequisite: Biological Sciences 101E or consent of instructor.

167 Field Botany (1) S
Lecture, laboratory, field. A taxonomic survey of selected plant families, including the role of floral biology and agencies of pollination in angiosperm evolution. Each student completes a short research problem. Prerequisites: Biological Sciences 101E and consent of instructor.

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

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

170 Evolutionary Processes (1) W
Lecture. An examination of the causes and effects of genetic variation in populations of both haploid and diploid organisms. Mechanisms that control rates of genetic change are emphasized.

171 Vegetation and Ecosystem Dynamics (1) F
Lecture, field. An introduction to major vegetation types of the world and the dynamics of their ecosystems. Particular emphasis on community ecosystem dynamics. Major emphasis will be given to community structure. Weekend field trips. A research paper is required. Prerequisites: Completion of or concurrent enrollment in Biological Sciences 101E and consent of instructor.

172 Physiological Plant Ecology (1) W
Lecture, field. An examination of the functional response of individual plants and plant communities to their environment. A research paper is required. Prerequisites: Biological Sciences 101E and consent of instructor; a course in plant physiology strongly recommended.

173 Physiological Animal Ecology (1) S
Lecture, field. An examination of the functional means by which vertebrates cope with thei environments; roles of osmoregulation, thermoregulation, and energy metabolism in the lives of tetrapods. Prerequisites: Biological Sciences 101E and consent of instructor.

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

175 Phycology (1) W
Lecture and laboratory. A survey of the structure, reproduction, and life histories of fresh-

water and marine algae. Prerequisite: Biological Sciences 101E or consent of instructor.

176 Phytoplankton Biology (1) S
Lecture. Systematics, population ecology, and general physiology of planktonic algae. Prerequisites: Biological Sciences 169 and 175 or consent of instructor.

176L Phytoplankton Biology Laboratory (¼) S
Laboratory, field. Identification procedures, use of taxonomic literature, and development of manipulatory skill in evaluating phytoplankton populations. Prerequisite: Concurrent enrollment in or completion of Biological Sciences 176.

177 General Entomology (1) F of even years
Lecture, laboratory, field. Introduction to insect structure, function, development, and classification. Emphasis on natural history, environmental associations, and relationships to man. Field trips and collection required. Prerequisite: Consent of instructor.

178 Aquatic Productivity (1) F
Lecture. Primary production in marine, estuarine, and freshwater environments. Productivity is also dealt with at levels of grazers, predators, and decomposers. Methods of measurement and their interpretation are of special concern. Designed for students pursuing careers in aquatic biology. Prerequisites: Biological Sciences 169 and 176 or consent of instructor.

179 Limnology and Fresh Water Biology (1) S
Lecture. Biology of freshwater environments: lakes, ponds, rivers, their biota, and the factors which influence distribution of organisms. Prerequisites: Biological Sciences 101E and 102E and consent of instructor.

180A-B Invertebrate Zoology (1-1) W, S of even years
Lecture, laboratory, field. Survey of major invertebrate phyla. Emphasis on comparative morphology, evolution, adaptive physiology, and biology of local marine invertebrates. Prerequisites: Biological Sciences 101B and E or consent of instructor.

181 Applied Marine Ecology (1) W of odd years
Laboratory, field. Applied and comparative studies of intertidal community structure. Analytical methods used in assessment of spatial distributions, standing crops, and food web structure. Data collected during three weekend field trips to warm and cold water areas will be contrasted and presented as a final report in manuscript form. Prerequisites: Biological Sciences 169, 182, and consent of instructor.

182 Applied Marine Productivity (1) W of odd years
Lecture. Applied and comparative studies of energy budgets and trophodynamics of intertidal populations and communities. Experience in application of productivity measurement methods. Reduction, interpretation, and reporting of data emphasized. Prerequisites: Biological Sciences 169, concurrent enrollment in Biological Sciences 181, and consent of instructor.

184 Demographic Modeling Laboratory (½) W
Laboratory. Introduction to construction of computer models of human populations. No previous experience in programming required; level of modeling undertaken will be related to individual programming capability. Prerequisite: Completion of or concurrent enrollment in Biological Sciences 166.

185 Field Ornithology (1) S of even years
Lecture. Field studies and reading from periodical literature. Emphasis on behavior and ecology, although aspects of physiology and taxonomy will be covered. Prerequisite: Consent of instructor.

187 Marine Biology (1) S
Lecture. Introduction to descriptive physical oceanography. Survey of marine habitats and adaptations of life forms necessary for survival. Impact of man on marine environment. Prerequisite: Course in general biology or consent of instructor.

187L Marine Biology Laboratory (¼) S
Prerequisite: Concurrent enrollment in Biological Sciences 187.

188 Introduction to Insect Physiology (1) W
Lecture. Physiology of insects. Insect respiration, digestion, excretion, and neurobiology, including sensory systems and effectors. Prerequisite: Upper division.

Honors and Special Courses

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

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

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

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

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

GRADUATE STUDY IN THE SCHOOL OF BIOLOGICAL SCIENCES

Graduate registration is a prerequisite for all 200-299 courses.

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. I includes emphasis on biochemistry, molecular genetics, enzymology, microbiology, immunology, and virology. Concentration in biophysical chemistry is available in a joint program with the Department of Chemistry. More specific subjects in which study can be undertaken are indicated by the research areas listed below for faculty members. The Department is well equipped for work that requires preparative and analytical ultracentrifugation, culture of microorganisms and animal cells, radioactivity determination, and other specialized techniques.

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

MOLECULAR BIOLOGY AND BIOCHEMISTRY FACULTY

Robert C. Warner, *Chairman of the Department:* Molecular biology of nucleic acids; physical chemistry of macromolecules

Stuart M. Arfin: Metabolic regulation; enzymatic mechanisms of the pathway and control of the biosynthesis of amino acids

Edward R. Arquilla: Structure-function characteristics and immunology of protein hormones
Jeffrey L. Clark: Hormone action; mechanism of growth stimulation by trophic hormones
Dennis D. Cunningham: Biochemistry of mammalian cell division
Charles N. Gordon: Electron microscopy of biological macromolecules
Gale A. Granger: Immunology, medical microbiology; cell biology
Wesley Hatfield: Molecular mechanisms of biological control systems
Kenneth H. Ibsen: Regulation of energy metabolism; properties of regulatory enzymes
Calvin S. McLaughlin: Biochemical genetics of RNA and protein synthesis
Kivie Moldave: Protein biosynthesis in mammalian tissues
Harris S. Moyed: Regulation of enzyme action and synthesis; mode of action of plant auxins
Dennis Piszkiewicz: Protein chemistry; amino acid sequence and catalytic groups of enzymes; enzyme kinetics
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
Betsy M. Sutherland: Enzymology of DNA repair
Paul S. Sypherd: Genetic control of ribosomal RNA and protein
Ethel Tessman: Molecular biology; genetics; virology
Irwin Tessman: Viral genetics; mode of action of mutagens
Krishna K. Tewari: Nucleic acids of chloroplasts and other organelles
Edward K. Wagner: Animal virology; RNA synthesis
Clifford A. Woolfolk: General microbiology; enzymology
Daniel L. Wulff: Biochemical genetics

COURSES IN MOLECULAR BIOLOGY AND BIOCHEMISTRY

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

201A-B-C Seminar in Molecular Biology and Biochemistry (1-1-1) F, W, S
Content varies. Presentation of research from the departmental laboratories, special recent developments when pertinent. Attendance is required of all graduate students in Molecular Biology and Biochemistry.

203A-B-C Tutorial in Molecular Biology and Biochemistry (1-1-1) F, W, S
Tutorials in the area of the research of a particular professor will relate current research in his laboratory to the literature. Tutorials may be conducted as journal clubs. Prerequisite: Consent of instructor.

204 Biochemical Methodology (1¼) F
Lectures and demonstrations of methods employed in molecular biology particularly centrifugation, radioactivity measurement, and fractionation methods. Prerequisites: Biochemistry equivalent to Biological Sciences 101F-G.

205A-B Biochemistry (1¼-1¼) F, W
Lecture. Structure and function of proteins and nucleic acids; basic aspects of enzymes as proteins; biosynthesis of macromolecules. Prerequisites: Biological Sciences 101F-G; organic chemistry.

207 Molecular Genetics (1¼) S
Molecular genetics; coding, control mechanisms in replication, transcription, and translation. Prerequisite: Biochemistry 205B or general background in biochemistry.

208 Biophysical Chemistry (1) S
Lecture. Physical chemistry of macromolecules; methods for investigation of the size, conformation, structure, and solution properties of proteins and nucleic acids. Prerequisites: Chemistry 131A-B.

209 Advanced Immunology (1) W
Seminar and lecture in key areas of immunology. Will include student reports and discussion. Prerequisite: Biological Sciences 121.

210 Biogenesis of Cell Organelles (1) S of even years
Lecture. Study of cell structures such as nuclei, chloroplasts, mitochondria, ribosomes, and membranes. Prerequisite: Biochemistry equivalent to Biological Sciences 101F-G.

212 Virology (1) F
Lecture. Infective cycle, growth, reproduction, and host interrelationships of animal viruses to molecular biology. Prerequisites: Biological Sciences 101F-G; genetics recommended.

212L Virology Laboratory (½) F
Laboratory work is available for a limited number of students. Prerequisites: Concurrent enrollment in Molecular Biology 212 and consent of instructor.

214 Biosynthesis of Nucleic Acids (1) S of odd years
Lecture. Structure, function, and replication of DNA and RNA in procaryotes and eucaryotes; emphasis on current research. Prerequisites: Biological Sciences 101F-G.

240 Medical Microbiology (2) W
Biochemical and genetic properties of infectious agents. Humoral and cellular components of immunity. Prerequisites: Biological Sciences 101F-G and consent of instructor.

241 Molecular Mechanisms of Pathogenesis (1) S
Analysis of biochemical and genetic determinants of antibiotic resistance, toxins, hemolysins and other factors associated with virulence. Prerequisites: Molecular Biology 240 and consent of instructor.

242 Cell Regulator Mechanisms (1) S
Control of growth and division in normal and malignant cells, genesis; mechanisms of immune rejection of foreign tissue grafts and malignant cells. Prerequisites: Biological Sciences 101F-G and consent of instructor.

243 Regulatory Mechanisms and Metabolic Diseases (1) S
Relation of regulation mechanisms of gene expression and enzyme activity to problems of disease. Prerequisites: Biological Sciences 101F-G and consent of instructor.

261 Biomolecular Structure (1) F
Structure of proteins as determined both in the solid state and solution will be discussed. Both diffraction and spectroscopic techniques will be discussed. Prerequisites: Chemistry 131A-B, Chemistry 131C, or Biological Sciences 123.

262 Biopolymers in Solution (1) W
Thermodynamics and structural mechanism of biopolymers will be covered. Both equilibrium and hydrodynamic methods will also be discussed. Techniques such as viscosity, sedimentation, osmotic pressure, and light scattering will be covered. Prerequisites: Chemistry 131A-B, Chemistry 131C, or Biological Sciences 123.

263 Biochemical Dynamics (1) S
Discussion of enzyme kinetics. A general discussion of multistep kinetics will be covered. Active sites, factors, and chemistry and biochemistry of co-factors will be discussed. Prerequisites: Chemistry 131A-B, Chemistry 131C, or Biological Sciences 123. Not offered in 1973.

280A-B-C Advanced Topics in Biochemistry and Molecular Biology (1-1-1) F, W, S
Selected topics in advanced biochemistry and molecular biology. Specific topics and the instructor will be announced in advance. Prerequisite: Consent of instructor; open to advanced undergraduates.

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

DEPARTMENT OF DEVELOPMENTAL AND CELL BIOLOGY

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

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

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

DEVELOPMENTAL AND CELL BIOLOGY FACULTY

Howard A. Schneiderman, *Chairman of the Department:* Developmental biology (insect development and physiology)
Stuart M. Krassner, *Vice Chairman of the Department:* Physiology, cell biology (parasitology and invertebrate biology) (on leave 1972-73)
Joseph Arditti: Physiology (orchid biology)
Ernest A. Ball: Developmental biology (development of higher plants)
Hans R. Bode: Developmental biology of coelenterates
Peter J. Bryant: Diploid genetics
Susan V. Bryant: Regeneration
Richard D. Campbell: Developmental biology (invertebrate development)
Donald E. Fosket: Plant physiology and development
Ralph W. Gerard: Physiology (general and neurophysiology)
Noelle A. Granger: Amphibian developmental biology
Peter F. Hall: Endocrinology
Patrick L. Healey: Cell biology, developmental biology (developmental cytology and ultrastructure)
E. Marshall Johnson: Experimental teratology
Robert K. Josephson: Comparative neurophysiology
Harold Koopowitz: Physiology (sensory and invertebrate physiology)
Howard M. Lenhoff: Physiology, developmental biology (marine invertebrate biology and comparative biochemistry)
Rosevelt L. Pardy: Biology of coelenterates (symbiosis)
Gerold A. Schubiger: Insect development
Grover C. Stephens: Physiology (comparative animal physiology)
Ernest R. Vyse: Insect nutrition and genetic analysis

COURSES IN DEVELOPMENTAL AND CELL BIOLOGY

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

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

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

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

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

230A Developmental Biology (1) F
Consideration of some major problems such as determination, differentiation, pattern formation, and morphogenesis in plants and animals. Prerequisite: Consent of instructor.

230B Genetics (1) W
Basic diploid genetics, cytogenetics, and the control of genic activity in multicellular organisms. Prerequisite: Consent of instructor.

230C Cell Biology (1) S
Involves a study of the structure and function of the cell and its organelles, the relationships between cells, and the relationships between nucleus and cytoplasm in animals and plants. Prerequisite: Consent of instructor.

231 Comparative Animal Physiology (1) F
Lecture. Maintenance aspects of physiology: water balance; feeding and digestion, metabolism; respiration and circulation.

231L Comparative Animal Physiology Laboratory (¼) F
Prerequisite: Concurrent enrollment in or completion of Developmental Biology 231.

233 Sensory Physiology (1) S
Lecture. Physiology and function of sense organs. Emphasis on transduction at the cellular level.

233L Sensory Physiology Laboratory (¼) S
Prerequisite: Concurrent enrollment in or completion of Developmental Biology 233.

234 Plant Physiology (1) S
Lecture. Hormonal and autotrophic aspects of physiology: hormones; environmental stimuli; photosynthesis and translocation.

234L Plant Physiology Laboratory (¼) S
Prerequisite: Concurrent enrollment in or completion of Developmental Biology 234.

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

240 Comparative Plant Morphology (1) W
Lecture and laboratory. Forms, structures, and functions of vegetative and reproductive aspects of algae, fungi, bryophytes, and vascular plants. Prerequisites: Biological Sciences 101B-C-D or consent of instructor.

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

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

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

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

249 Insect Development (1) S
Lecture. Insects discussed as providing ideal experimental situations in which to analyze major problems of developmental biology. In depth exploration of the interrelationships between these problems. Prerequisite: Consent of instructor.

251 Developmental Genetics (1) S
Genetic aspects of developmental processes. Prerequisite: Consent of instructor.

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

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

263 Current Topics in Developmental Biology (1-1-1) F, W, S
Topics will vary from year to year. Prerequisite: Consent of instructor.

264 Coelenterate Biology (1-1-1) F, W, S
Topics will vary from year to year. Prerequisite: Consent of instructor.

265 Parasitology (1-1-1) F, W, S
Topics will vary from year. Prerequisite: Consent of instructor. (Not offered 1972-73.)

266 Comparative Physiology (1-1-1) F, W, S
Topics will vary from year to year. Prerequisite: Consent of instructor.

267 Morphogenesis of Vascular Plants (1) F
Utilization of current literature, with demonstrations of the origins, micro and ultrastructure, development of the plant. Theoretical considerations of genic and environmental factors. Prerequisites: Biological Sciences 140 or equivalent courses in elementary morphology or anatomy of vascular plants, or consent of instructor.

283 Teratology (1) W of even years
Abnormal development of animals. The influence of changes in environmental, genetic, and biochemical factors which induce teratogenesis. Prerequisite: Consent of instructor.

286A-B-C Current Literature in Developmental Biology (½-½-½) F, W, S
Discussion of recent articles in a wide variety of journals dealing with topics of developmental biology.

287 Vertebrate Endocrinology (1) S
Lecture. Mechanisms by which hormones regulate metabolic and other cellular functions. Primary data upon which current ideas on endocrinology are based. Prerequisites: Physiology and biochemistry.

288 Introduction to Insect Physiology (1) W
Lecture. Physiology of insects. Insect respiration, digestion, excretion, and neurobiology including sensory systems and effectors.

289A-B-C Regeneration (½-½-½) F, W, S
Seminar on current topics in vertebrate regeneration.

290A-B-C Colloquium in Developmental and Cell Biology (½-½-½) F, W, S
Presentation of contemporary research problems. Research students, faculty, and other invited speakers will introduce research and review topics.

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. Graduate study in Psychobiology requires strong backgrounds in the physical and biological sciences as well as mathematics, computer sciences, and experimental psychology.

PSYCHOBIOLOGY FACULTY

James L. McGaugh, *Chairman of the Department:* Learning and memory
Carl Cotman: Neurochemistry, molecular psychology
Roland A. Giolli: Experimental neuroanatomy
Albert Globus: Experimental neuroanatomy and neurophysiology
Robert K. Josephson: Invertebrate neurophysiology
Gary S. Lynch: Neural systems
Ernest P. Noble: Human behavior
Arnold Starr: Neural bases of sensory processes
Richard F. Thompson: Neurophysiological bases of behavior
Marcel Verzeano: Neurophysiology
Jack C. Waymire: Neurochemistry, neuropharmacology
Norman M. Weinberger: Neural bases of arousal and attention
Richard E. Whalen: Neural and endocrine basis of behavior

COURSES IN PSYCHOBIOLOGY

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

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

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

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

206A-B-C Psychobiology Graduate Core: Lecture

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

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

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

207A-B-C Psychobiology Graduate Core: Lecture

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

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

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

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

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

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

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

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

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

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

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

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

245 Advanced Biochemical Neuropharmacology (1) S
Study of molecular mechanisms of action of drugs affecting central nervous system. Basic mechanisms by which drugs alter synthesis, storage uptake, release, and catabolism of neuraltransmitters will be emphasized.

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

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

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

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

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

251 Analysis of Neurology of Auditory Behavior (1) F of even years
Analyzation of basic processes in hearing using information from neurophysiology, neuroanatomy, behavioral and clinical material.

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

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

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

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

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

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

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

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

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

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

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

***271 Seminar in Auditory Neurophysiology** (1/3-1/3-1/3) F, W, S

***272 Seminar in Neurophysiology Behavior** (1/3-1/3-1/3) F, W, S

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

*By consent of instructor.

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

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

COURSES IN POPULATION AND ENVIRONMENTAL BIOLOGY

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

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

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

210 Tropical Biology: An Ecological Approach (3-3) W, Summer
Intensive field study and integration of 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: 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.

213 Pleistocene Environments (1) W every third year
Lecture and discussion. Review of environmental factors during late Tertiary and Pleistocene times. Surveys of geological, climatological, and biotic features of these environments. Prerequisites: Population and Environmental Biology 266 and consent of instructor.

214 Urban Ecosystems (1) W every third year beginning 1973
Lecture. Evolution of human settlement patterns and their environmental interactions. Development and fundamental behavioral bases of educational, communication, transportation, recreation, and other systems. Prerequisites: Biological Sciences 166 and consent of instructor.

215 Hominid Evolution (1) W every third year beginning 1973
Lecture. Evolution of genus Homo from primate origins to appearance of H. sapiens. Includes ancestral primate, hominoid and hominid features, evolution of communication, cooperation, culture, and other social behavioral patterns. Prerequisites: Biological Sciences 166 and consent of instructor.

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

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

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

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

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

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

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

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

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

264 Topics in Population/Community Ecology (1) W of odd years
Foundations and historical development of ideas in population ecology. Modern concepts will be evaluated through seminars and use of periodical literature. Prerequisite: Consent of instructor.

265 Population Ecology (1) F
Lecture. Growth and regulation of plant and animal populations: extrinsic and intrinsic factors; competitive and predator/prey interactions; factors in spatial distribution; genetic interactions; computer modeling of population phenomena. Prerequisites: Biological Sciences 101E and one year of calculus.

266 Human Ecology (1) W
Lecture and multi-media. Demographic features such as birth and death rate, intrinsic rate of increase, carrying capacity and optimum populations. Effect of human populations on environment and environment on human populations, settlement patterns, and society evolution. Prerequisites: Biological Sciences 101E and consent of instructor.

267 Field Botany (1) S
Lecture, laboratory, field. A survey of selected plant families, illustrating the role of floral biology and agencies of pollination in angiosperm evolution. Each student will choose and complete a short research problem.

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

270 Evolutionary Processes (1) W
Lecture. Examination of causes and effects of genetic variation in populations of both haploid and diploid organisms. Mechanisms that control rates of genetic change are emphasized. Prerequisite: Biological Sciences 101E.

271 Vegetation and Ecosystem Dynamics (1) F
Lecture, field. Major vegetation types of the world and dynamics of their ecosystems. Emphasis on community ecosystem dynamics. The role of these factors within dominant ecosystems of the world today will be analyzed. Major emphasis will be given to community structure and to plant communities. Two weekend field trips. A research paper is required. Prerequisite: Consent of instructor.

272 Physiological Plant Ecology (1) W
Lecture, laboratory, field. Functional response of individual plants and plant communities to their environment. Major emphasis will be on photosynthetic response and plant water relations. Prerequisites: Previous courses in ecology and plant physiology.

273 Physiological Animal Ecology (1)
Lecture, laboratory, field. Means by which vertebrates cope with environments. Emphasis on the roles of osmoregulation, thermoregulation, and energy metabolism in lives of tetrapods. Prerequisite: Consent of instructor.

274 Behavioral Ecology (1) F of even years
Lecture, seminar. Consideration of animal behavior as evolutionary solution to problems encountered during life cycle. Includes communication, habitat selection, and food finding. Prerequisite: Consent of instructor.

275 Phycology (1) W
Lecture, laboratory. Structure, reproduction, and life histories of freshwater and marine algae. Prerequisite: Biological Sciences 101E or consent of instructor.

276 Phytoplankton Biology (1) S
Lecture. Systematics, population ecology, and general physiology of planktonic algae. Prerequisite: Consent of instructor.

276L Phytoplankton Biology Laboratory (¼) S
Laboratory, field. Identification procedures, use of taxonomic literature, and development of manipulatory skill in evaluating phytoplankton populations. Prerequisite: Concurrent enrollment in or completion of Population and Environmental Biology 276.

277 General Entomology (1) F of even years
Lecture, laboratory. Insect structure, function, development, and classification; natural history, environmental associations, and relationships to man. Field trips and collection required. Prerequisite: Consent of instructor.

279 Limnology and Freshwater Biology (1) S
Lecture. Biology of freshwater environments: biota of lakes, ponds, rivers; factors which influence distribution of organisms. Prerequisites: Biological Sciences 101E and 102E and consent of instructor.

280A-B Invertebrate Zoology (1-1) W, S of even years
Lecture, laboratory, field. Major invertebrate phyla; comparative morphology, evolution, adaptive physiology, and biology of local marine invertebrates. Prerequisite: Consent of instructor.

281 Applied Marine Ecology (1) W of odd years
Laboratory, field. Intertidal community structure. Analytical methods used in assessment of spatial distributions, standing crops, and food web structure. Prerequisites: Population and Environmental Biology 269, concurrent enrollment in 282, and consent of instructor.

282 Applied Marine Productivity (1) W of odd years
Lecture. Energy budgets and trophodynamics of intertidal populations and communities. Application of productivity measurement methods; reduction, interpretation, and reporting of data. Prerequisites: Population and Environmental Biology 269, concurrent enrollment in 281, and consent of instructor.

284 Demographic Modeling Laboratory (½) W
Laboratory. Construction of computer models of human populations. No previous programming experience required. Prerequisite: Completion of or concurrent enrollment in Population and Environmental Biology 266.

285 Field Ornithology (1) S of even years
Lecture. Behavior and ecology; some aspects of physiology and taxonomy; field studies and readings from periodical literature in ornithology. Prerequisite: Consent of instructor.

290A-B-C Colloquium in Population and Environmental Biology (1/3-1/3-1/3) F, W, S
Invited speakers will introduce research and review topics. Prerequisite: Consent of instructor.

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-residence faculty, visiting artists have and will always comprise about one-third of the staff, providing a constant inflow of ideas and personalities. 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.

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

In addition to producing student concerts, musicals, and dramatic performances, the School of Fine Arts in collaboration with UCI's Committee for Arts and Lectures presents a varied offering of cultural events each year, including distinguished lecturers, world-renowned concert artists, outstanding dance and drama groups, jazz and folk performers, a film series, and a gallery program.

The School of Fine Arts is organized as a School with areas of instruction and production, not with formal departments. The faculty generally meets as a whole one or two times a year. The faculty in each of the major areas of instruction (art, dance, drama, music) nominates five students to the Dean's Student Advisory Council. The Dean selects two undergraduates and one graduate student from each area. These twelve students comprise the Dean's Student Advisory Council for a term of one year. The Council meets about six times a year. This council reviews matters concerning appointments and promotions, curriculum, appropriations,

policy on graduate admissions, productions and concerts, and community relations. There is no difference between undergraduate and graduate participation. The students act as an ad hoc review committee on all permanent appointments and on all recommendations for merit increases and promotions. Students in the School of Fine Arts are involved at a less formal level as participants, organizers, and coordinators throughout the year in the various productional units, including the University Chorus, University Orchestra, University Theatre, Student Exhibitions, Graduate Art Gallery, Dance Concerts, Friday One O'Clock Concerts, Dance Workshop, Drama Workshop, Music Workshop, and Film Production.

All new students are assigned, or they may choose their own, faculty advisors and are encouraged to meet with them during new student orientation week and periodically throughout the year to plan programs of study and to discuss educational and career objectives. In addition, students are invited to make use of the counseling services in the School of Fine Arts office for assistance with programs, requirements, or any academic matter.

Degrees Offered in the School

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

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

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: None (see under departments).

GRADUATE PROGRAM

The School of Fine Arts offers programs leading to the degree of Master of Fine Arts with programs in Art, Dance, Drama, and Music. The primary activity of the School of Fine Arts is performance — the creative act. Research activities are concerned with illuminating performance and inspiring the studio experience. The intellectual activity of theoretical, literary, and historical courses complements the practical work in studio workshops and performance. The aim of the program is, thus, to produce literate artists who are responsive to intellectual stimuli, who are capable of integrating knowledge into creative acts, and who are disciplined to the point of freedom. It is the strong belief of the School that intellectual integrity and professional excellence cannot exist without each other.

Admission to the Program

Although the campus deadline for applications to be filed for the fall quarter is July 1, the quota of graduate students admitted to the School of Fine Arts is usually filled by March 1. Students are, therefore, advised to make application and to arrange for submission of portfolios, auditions, compositions, dossiers, and interviews by February 1. Students are not admitted to the program during the winter or spring quarters; no program is offered during the summer session. Students applying for scholarships and fellowships should do so through the Graduate Division not

later than February 1 for the following year. The School of Fine Arts has a modest number of Teaching Assistantships available in all areas, and all candidates are automatically reviewed for Teaching Assistantship positions; the School informs successful candidates by May 1 for the following academic year.

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

ART

The program in art provides basic studio experiences in the fundamental knowledge and techniques of drawing, painting, sculpture, design, ceramics, and graphic arts, and a comprehensive study of the history and criticism of art. The curriculum constantly relates studio practice to the development of the visual arts and current critical theory. It aims to develop a sense of visual awareness by as wide a range of the study of art as possible. The program is designed for students preparing to continue professionally as artists, as critics, as historians, as curators in museums, and as teachers, as well as for students who, while not planning to make the study of art their vocation, have a serious interest in the theory, practice, and history of the visual arts.

The distinguishing characteristics of the program leading to the Bachelor of Arts degree lie in the interrelated approach to studio practice, history, and criticism. The student majoring in art experiences the creative aspects of art by learning to think with the materials and techniques of his medium. He experiences, furthermore, the historical continuum of art as a research source and cultural achievement. And finally he engages in critical exercise which is essential to achieving the vital balance between the perceptual and conceptual in the creative process. The aim of the program in the visual arts is to enable the student to apply himself to any visual situation (studio, historical, critical) rather than to apply prelearned techniques or a rigid intellectual pattern.

Requirements for the Bachelor's Degree

University Requirements. See page 22.

School Requirements: None.

Departmental Requirements

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

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

108N, 109, 109N, 110N, 128, 129); two studio art courses; three courses in Fine Arts outside the departmental major (these courses may be taken on Pass/Not Pass basis).

Master of Fine Arts Program

Degree Offered

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

Admission

Applicants for admission to the degree program must:

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

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

(c) submit a portfolio of their creative work.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions.

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

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

Specific Degree Requirements

Completion with grade of not less than B of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate courses may count towards the degree. The 72 units will normally be made up in the following manner:

First Year: 3 seminars in problems of contemporary art (Art 230); 3 courses studio and/or graduate projects; 3 electives.

Second Year: 3 seminars in problems of contemporary art (Art 230); 3 courses studio and/or graduate projects; 1 course thesis preparation; 2 electives.

ART FACULTY

Edward Avedisian, *Lecturer in Art*
Ed Bereal, *Lecturer in Art*
Vija Celmins, *Lecturer in Art*
William Condon, *Lecturer in Art*
Tony DeLap, *Associate Professor of Art*
Robert Irwin, *Lecturer in Art*
John Paul Jones, *Lecturer in Art*
Craig Kauffman, *Lecturer in Art*
Phil Leider, *Lecturer in Art*
John Mason, *Associate Professor of Art*
David Metzgar, *Assistant Professor of Art*
Edward Moses, *Lecturer in Art*
Beverly O'Neill, *Assistant Professor of Art*
Frank Roth, *Lecturer in Art*

LOWER-DIVISION COURSES IN ART

20 Nature of Art (1)

30A-B-C Visual Arts Fundamentals (1-1-1) F, W, S

30A Fundamentals of drawing and pictorial structure (1) F

30B Theory of color and two-dimensional design (1) W

30C Three-dimensional design (1) S

40A-B-C History of Art (1-1-1) F, W, S

46 The Nature of Architecture (1)

50A-B-C Drawing (1-1-1) F, W, S

60A-B-C Painting (1-1-1) F, W, S

70A-B-C Sculpture (1-1-1) F, W, S

86A-B-C Ceramics (1-1-1) F, W, S

UPPER-DIVISION COURSES IN ART

Courses in the following 100-109 sequence will include such topics as: The Arts of Crete and Early Greece, Roman Architecture, Early Christian and Byzantine Art, Gothic Architecture, Italian Renaissance Sculpture, Baroque Painting, The Rococo, Impressionism, and 20th-Century Painting.

The topics within a given area will vary from quarter to quarter; hence if the topic varies each course may be repeated for credit. Art 40A-B-C *is prerequisite.*

100 Studies in Ancient Art (1)

101 Studies in Greek Art (1)

102 Studies in Roman Art (1)

103 Studies in Medieval Art (1)

104 Studies in Southern Renaissance Art (1)

105 Studies in Northern Renaissance Art (1)

106 Studies in Baroque Art (1)

107 Studies in 18th-Century Art (1)

108 Studies in 19th-Century Art (1)

109 Studies in 20th-Century Art (1)

110 Studies in American Art (1)

111 Studies in Primitive Art (1)

112 Studies in Oriental Art (1)

Art 40A-B-C is not prerequisite for the following 100N sequence courses:

100N Ancient Art (1)

103N Medieval Art (1)

104N Italian Renaissance (1)

105N Northern Renaissance (1)

106N Baroque (1)

108N 19th-Century Art (1)

109N 20th-Century Art (1)

110N 20th-Century Architecture (1)

112N Oriental Art (1)

127 History of Design (1)

128 Art and Technology (1)

129 New American Art (1)

140 Criticism of Art (1)

All advanced problems, special studies, and tutorial courses may be repeated for credit.

145 Advanced Problems in Design (1)
Prerequisites: Art 30A-B-C.

150 Advanced Problems in Drawing (1)
Prerequisites: Art 30A-B-C and 50A-B-C.

160 Advanced Problems in Painting (1)
Prerequisites: Art 30A-B-C and 60A-B-C.

170 Advanced Problems in Sculpture (1)
Prerequisites: Art 30A-B-C and 70A-B-C.

180 Problems in Graphic Arts (1)

185 Design and Typography (1)

186 Advanced Problems in Ceramics (1)
Prerequisites: Art 30A-B-C and 86A-B-C.

190 Studio Problems (1)

191 Studio in Drawing (1)

192 Studio in Painting (1)

193 Studio in Sculpture (1)

194 Studio in Graphic Arts (1)

195 Art Museum Problems (1)

196 Tutorial in Art History (1)

198 Proseminar in Art History (1)

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 preparing to continue professionally as dancers, as choreographers, and as teachers, as well as for students who, while not planning to make the study of dance their vocation, have a serious interest in the theory, practice, and history of dance.

The traditional technique of classical ballet constitutes a craft and style that serves 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 freestyle. 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 Prerequisites

Basic ability in techniques of ballet and freestyle dance forms is prerequisite to declaring a major in dance. All students who desire to declare a major in dance must audition. All freshmen and advanced standing applicants to the University who have indicated an interest in majoring in dance will be notified by the department of dance of the date of audition, the successful completion of which is the authorization to declare a major in dance.

Inasmuch as the level of performance is generally determined by the length of time in study, all transfer students must anticipate meeting the total performance requirements for the B.A. degree. Students deficient in level of performance in comparison to their level of study should plan to extend their studies in order to meet performance requirements.

Departmental Requirements

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

Teaching, Criticism, or Choreography Major: Three years studio work in ballet (Dance 30A-B-C, 35A-B-C, 130A-B-C); two years studio work in freestyle (Dance 40A-B-C, 45A-B-C); one years studio work in jazz (Dance 50A-B-C); one years work in theory (Dance 20A-B-C); one years work in music for dancers (Dance 120A-B-C); three courses in history of world dance (Dance 110A-B-C); three courses in dance

notation (Dance 65A-B-C); three courses in choreography (Dance 155A-B-C); two courses in acting (Drama 30A-B); participation in dance performance.

Master of Fine Arts Program

Degree Offered

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

Admission

Applicants for admission to the degree program must:

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

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

(c) provide proof by personal audition, or submission of a film of their work, of their practical ability in ballet, freestyle, and jazz dance forms.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions.

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

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

(d) Candidates presenting a written research thesis are required to demonstrate a reading knowledge of French. Subject to faculty approval this knowledge may be demonstrated by: Educational Testing Service Foreign Language Test; an examination administered by the faculty; or satisfactory completion of a course at a specified level.

Specific Degree Requirements

Completion with grade of not less than B of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate courses may count toward the degree. The 72 units will normally be made up in the following manner:

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

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

DANCE FACULTY

Eugene Loring, *Professor of Dance and Chairman of Dance*
Donald Bradburn, *Lecturer in Dance*
Roy Fitzell, *Lecturer in Dance*
Jack Kauflin, *Lecturer in Dance*
Olga Maynard, *Lecturer in Fine Arts*
June Morris, *Lecturer in Dance*
James Penrod, *Assistant Professor of Dance*
Janice Gudde Plastino, *Assistant Professor of Dance*
Barbara Plunk, *Lecturer in Dance*
Clinton Rothwell, *Lecturer in Dance*
Joe Tremaine, *Lecturer in 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 Freestyle I (½-½-½)

45A-B-C Studio Workshop in Freestyle II (½-½-½)
Prerequisites: Dance 40A-B-C (Freestyle I).

50A-B-C Studio Workshop in Jazz I (½-½-½)
Prerequisites: Dance 40A-B-C.

55A-B-C Studio Workshop in Jazz II (½-½-½)
Prerequisites: Dance 50A-B-C (Jazz I).

65A-B-C Dance Notation (1-1-1)
Prerequisite: One years work in a studio workshop course.

UPPER-DIVISION COURSES IN DANCE

110A-B-C History of World Dance (Prehistoric to Contemporary) (1-1-1)
Offered alternate years with Dance 112A-B-C.

112A-B-C History of Theatre Dance (Renaissance Ballet to Contemporary) (1-1-1)
Offered alternate years with Dance 110A-B-C.

120A-B-C Music for Dancers (1-1-1)
Offered alternate years.

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 Freestyle (½)
May be repeated for credit. Prerequisites: Dance 45A-B-C (Freestyle 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 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 Freestyle (½)
May be repeated for credit. Prerequisite: Dance 140 (Advanced Studio Workshop in Freestyle).

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: Freestyle (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 years survey in the development of dramatic literature (Drama 40A-B-C); one year in acting (Drama 30A-B-C); one year in design (Drama 100A-B-C); two upper-division courses in dramatic literature (140 through 150); six upper-division courses in addition to the two in dramatic literature mentioned above (these may be in studio work and/or in dramatic literature, playwriting, film writing, and criticism); three courses in Fine Arts outside the departmental major, including two consecutive quarters (which are equivalent to one course) in dance (these courses may be taken on Pass/Not Pass); participation (acting or technical) in at least one major University Theatre production a year (Drama 160).

Master of Fine Arts Program

Degree Offered

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

Admission

Applicants for admission to the degree program must:

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

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

(c) submit by April 1 a dossier of biographical information and theatrical experience to the School of Fine Arts. This dossier must include:

(1) for directing candidates, a resume of directing (and related) experience, photographs and reviews of productions directed, if available, and an analysis of a play you desire to direct, indicating your directorial approach.

(2) for design candidates, a portfolio of design and photographs and reviews of executed designs, if available.

(3) for acting candidates, a resumé of acting (and related) experience, and photographs and reviews of acting performance; auditions will be scheduled when feasible.

General Degree Requirements

(a) Residence: normally two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions.

(b) Demonstration of familiarity with an assigned list of books and plays on which the candidate will be examined during his second year of residence.

(c) Demonstration of degree calibre by a major production thesis, i.e., perform a major role, direct or design a major production. This thesis is to be supported by a written paper of about twenty pages or, if a director, a complete prompt book which includes a full analysis of the director's intentions. The production

thesis and paper are to be defended in a one-hour oral examination which may also test the candidates's general knowledge in the area of his specialization.

(d) Attainment of a 3.15 G.P.A. during the first year of residence.

(e) Participation in productions at UCI throughout residence.

Specific Degree Requirements

Completion with grade of not less than B of 72 quarter units of graduate or approved upper-division undergraduate courses. Not more than 20 units of undergraduate courses may count towards the degree. The 72 units will normally be made up in the following manner:

Acting: 6 courses of graduate acting; 1 course in directing; 3 seminars in dramatic literature; 3 courses in advanced University Theatre; 1 course graduate projects; 1 course thesis preparation; 3 electives.

Directing: 5 courses of graduate directing; 1 course in acting; 1 course advanced design; 3 courses advanced University Theatre; 3 seminars in dramatic literature; 1 course graduate projects; 1 course thesis preparation; 3 electives.

Design: 6 courses of graduate design; 1 course in directing; 3 seminars in dramatic literature; 3 courses advanced University Theatre; 1 course graduate projects; 1 course thesis preparation; 3 electives.

DRAMA FACULTY

Gary Belshe, *Lecturer in Drama*
Ian Bernard, *Lecturer in Drama*
Ashley Carr, *Lecturer in Drama*
Peter Church, *Lecturer in Drama*
Robert S. Cohen, *Associate Professor of Drama*
Curt Conway, *Lecturer in Drama*
Mary Karen Dahl, *Acting Assistant Professor of Drama*
John Elliott, *Production Manager*
Clayton Garrison, *Professor of Drama and Dean of Fine Arts*
Cameron Harvey, *Assistant Professor of Drama*
Herbert Machiz, *Lecturer in Drama*
Brewster Mason, *Lecturer in Drama*
Richard Triplett, *Associate Professor of Drama*

LOWER-DIVISION COURSES IN DRAMA

20 The Nature of Drama: Structure and Style (1)

25 Shakespeare (1)

30A-B-C Acting (1-1-1)

30A Movement, Improvisation, Theatre Games

30B Characterization and Scenes

30C Performance Technique

32 Playwriting (1)
Same as English Wr 32.

40A-B-C Development of Drama (1)
Same as Comparative Literature 40.

40A Greek Drama through Shakespeare

40B Restoration Drama through Ibsen

40C Contemporary Drama

UPPER-DIVISION COURSES IN DRAMA

100A-B-C Design for Theatre (1-1-1)

100A Costume Design

100B Scene Design

100C Lighting Design

103 Lectures in Dramatic Literature (1)
May be repeated, provided topic changes. Courses include Medieval and Tudor Drama, Elizabethan and Jacobean Drama, Shakespeare, Restoration and Eighteenth-Century Drama, Modern British Drama, Modern American Drama, Tragedy, and Comedy. Same as English 103.

104 Greek Drama (1)
May be repeated, provided topic changes.

105A-B-C Technical Production (1-1-1)

105A Costume

105B Scenery

105C Lighting

106 Make-up (1)

109 History of Film
Same as Art 109.

112 Advanced Playwriting (1)
Same as English Wr 112. May be repeated for credit. Prerequisite: Drama 32.

114 Film Writing (1)
May be repeated for credit.

115A-B-C Film Making (1-1-1)
Prerequisite: Interview with instructor.

116 Film Criticism (1)

117 Russian Stage and Film Drama
Same as Russian 155.

120A-B History of Design in Theatre (1-1)

130 Advanced Acting (1)
May be repeated for credit. Prerequisites: Drama 30A-B-C and audition.

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 Realism and Revolt: Ibsen to O'Neill (1)

151 Advanced Theatre Design (1)
May be repeated for credit.

152 Advanced Lighting Design (1)
May be repeated for credit.

154 Costuming for the Theatre (1)
May be repeated for credit.

155 Advanced Costume Design for Theatre (1)
May be repeated for credit.

160 University Theatre (1)
May be repeated for credit.

165 Music Theatre Workshop (1)
May be repeated for credit.

166 History of Operetta and Musical Theatre (1)

170 Directing (1)
May be repeated for credit.

173 Theatre Orchestra (1)
Same as Music 173. 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)
May be repeated for credit. Prerequisites: Drama 115A-B-C and permission of instructor.

The following courses may be repeated for credit:

190 Studio in Acting (1)

191 Studio in Directing (1)

194 Tutorial in Criticism (1)

195 Studio in Production (1)

197 Dramatic Literature (1)

198 Drama Workshop (1)

GRADUATE COURSES IN DRAMA

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Acting (1)

211 Graduate Studio: Directing (1)

212 Graduate Studio: Playwriting (1)

213 Graduate Studio: Design (1)

214 Graduate Studio: Film Writing (1)

215 Graduate Studio: Film Making (1)

220 Seminar in Dramatic Literature (1)

221 Seminar in Criticism (1)

222 Seminar in Theatre History (1)

230 Seminar in Contemporary Theatre (1)

240 Graduate Projects (1)

250 Directed Reading (1)

260 Thesis (1)

MUSIC

The program for the Bachelor's Degree with a major in music is designed for two main classes of students: those who wish to obtain a sound background in music leading to a terminal degree and those who wish to obtain a thorough preparation for undertaking graduate work in one or more of four broad fields: musicology, composition, music performance, and teaching. The program provides intensive

training in three mutually dependent areas as related components of a total musical experience: performance and musicianship, the theory of music, and the history of music. A knowledge of all three of these areas is indispensable and minimal for a successful career in music.

Entering majors are expected to have competence in the practice of music – in reading and performing. Basic to the program for the graduating major is an effective command of the piano: the performance at sight of moderately difficult works. Students may demonstrate this skill by examination.

Performance requirements include a senior recital, instrumental or vocal, and participation in the chorus, orchestra, or in chamber music during each of the student's four years.

Beyond the specific goals outlined above and the requirements listed below, the student in music, through cooperative programs undertaken in conjunction with the other parts, achieves an awareness of the relationship of music to those other arts and of the various roles of music in society, both past and present.

Entrance Requirements

At the commencement of the student's freshman year he will be given an entrance examination to determine whether he meets the requirements of the department as stated below. After two years, the faculty will meet as a jury to determine whether the student is making sufficient progress to quality him as an upper-division music major. All transfer students must take placement examinations.

Voice Majors

Recommend at least two years private study and/or participation in choral or orchestral ensemble and facility at the keyboard. Background in Italian, French, and German art songs is recommended.

Piano Majors

The requirements for an entering piano major are that the candidate should have mastered a Haydn or Mozart sonata, a two-part invention of Bach, and all the major and minor scales and arpeggios.

Woodwinds

Sustained tone production, precise intonation over a dynamic range from *pianissimo* to *fortissimo*, control of breath, tongue, and double and triple tongue attacks over the entire range of the instrument, all major and minor scales and arpeggios *legato* and *staccato* commensurate with the range and technique of the instrument, are required. The student should be able to play and read a repertoire of a difficulty comparable to the earlier symphonies of Haydn, Mozart, Beethoven, and Schubert, and should demonstrate knowledge of the sonata literature for his particular instrument.

Brass

Essentially the same requirements as for woodwinds.

Percussion

Mastery of rudimentary drum techniques and a knowledge of the piano comparable to grade three is required.

Strings

Clear tone production, precise intonation with and without vibrato, controlled vibrato, slurred, *detache*, *loure*, *staccato*, and simple *spiccato* bow strokes, knowl-

:dge of all major and minor scales and arpeggios are highly desirable. The student hould also be able to satisfy the same general repertoire requirements listed above nder woodwinds.

Requirements for the Bachelor's Degree

Jniversity Requirements: See page 22.

School Requirements: None.

Department 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 nd Music 15A-B-C to be taken concurrently with 130A-B-C); one years work in istory and literature of music to be preceded by Music 30A-B-C (Music 40A-B-C); ne years work in counterpoint (Music 135A-B-C); one years work in form and nalysis (Music 155A-B-C); three upper-division courses in history and criticism of nusic (Music 140 through 145, 152A-B-C); three courses in Fine Arts outside the lepartmental major (these courses may be taken on Pass/Not Pass); command of iano; participation in the chorus, orchestra, or in chamber music each year; a enior recital. For vocal majors only: vocal performance (163) each quarter.

Master of Fine Arts Program

Degree Offered

M.F.A. in composition, voice, choral conducting, or musicology.

Admission

Applicants for admission to the degree program must:

a) meet the general requirements for admission to graduate status. The Graduate Record Examination is not required, although an applicant may submit the results of it if he so wishes.

b) hold a B.A. or a B.M. in Music, or the equivalent.

c) submit a composition or audition (or present a recorded demonstration of performance) if applying for the program in composition or in performance. Applicants must also submit an 8-10 page paper on a musical subject (analytical, theoretical, historical); this requirement may be fulfilled by the submission of an undergraduate term paper.

d) be tested by an examination in their knowledge of basic musical tools: ear training, sight-singing, written and keyboard harmony, dictation, score reading, and minimal facility at the piano (including sight-reading). Applicants must submit proof of at least two years college study of at least one of the following languages: French, German, Italian.

General Degree Requirements

a) Residence: normally, two years. Each candidate must enroll for three courses each quarter for six quarters, exclusive of summer sessions.

b) Comprehensive examination: normally undertaken after 3-4 quarters in residence. Passing these examinations allows the student to progress to candidacy for the M.F.A. A student failing these examinations may reschedule them once in the following quarter.

c) Demonstration by a written examination (administered by the music faculty) of a reading knowledge of two languages other than English (French, Italian, Ger-

man, Latin). Reading knowledge of one of these languages must be demonstrated by written examination before the candidate may schedule his comprehensive examination (see above, under b).

(d) Participation in performance at UCI throughout residence.

Specific Degree Requirements

(a) Completion with grade of not less than B of 72 quarter units of graduate level courses, or approved upper-division undergraduate courses. The latter, when taken by a graduate student at UCI and not exceeding twenty quarter units, may count towards the M.F.A. degree.

The following programs are now offered:

Composition: 2 courses in bibliography; 2 seminars in history; 2 courses in elementary composition; 2 courses in intermediate composition; 2 courses in advanced composition (see (b)1. below); 3 courses in graduate projects; 5 electives.

Voice or Choral Conducting: 2 courses in bibliography; 2 tutorials (1st year); 2 courses in diction and performance; 2 seminars in vocal literature; 1 tutorial (2nd year); 1 course in diction and preparation; 1 two recitals (see (b) 1. below); 3 courses in graduate projects; 4 electives.

Musicology: 2 courses in bibliography; 1 course in notation; 5 seminars in history; 2 courses in thesis preparation (see (b) 1. below); 2 courses in directed reading; 1 course in graduate projects; 5 electives.

(b) 1. Preparation of a project in composition or a performance, supported by a written essay of about twenty pages.
OR
2. Preparation of an essay (thesis) of about seventy-five pages in an area of musical research.

MUSIC FACULTY

H. Colin Slim, *Professor of Music and Chairman of Music*
Maurice Allard, *Associate Professor of Music and Conductor of the University Chorus*
Nancy Bramlage Ewing, *Lecturer in Music*
Lawrence Gordon, *Lecturer in Music*
William Holmes, *Associate Professor of Music*
Jonah Kliewer, *Lecturer in Music*
Arnold Juda, *Lecturer in Music*
Peter Odegard, *Associate Professor of Music and Conductor of the University Orchestra*
Michael Sanders, *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)
To be taken concurrently with Music 30A-B-C.

10 Basic Piano (½)
For music majors only. May be repeated for credit.

15A-B-C Musicianship II (½-½-½)
To be taken concurrently with Music 130A-B-C.

20 Nature of Music (1)

30A-B-C Theory (1-1-1)
To be taken concurrently with 5A-B-C.

40A-B-C History and Literature of Music (1-1-1)
Prerequisite for Music Majors only: Music 30A-B-C.

40A Medieval and Renaissance

40B Baroque and Classical

40C Romantic and Contemporary

50A-B-C Composition (1-1-1)

65 Literature for Keyboard (½)

66 Literature for String Instruments (½)

67 Literature for Wind Instruments (½)

68 Vocal Literature (½)
To be taken concurrently with Music 162.

UPPER-DIVISION COURSES IN MUSIC

130A-B-C Theory II (1-1-1)
To be taken concurrently with Music 15A-B-C.

135A-B-C Counterpoint (1-1-1)
Offered alternate years with Music 155A-B-C.

138A-B-C Fugue (1-1-1)

Courses in the following 140-145 sequence are for music majors and will include such topics as: The Motet in the 13th and 14th Centuries, Renaissance Keyboard Music, The Cantatas of Bach, the 18th-Century Symphony, Early Romantic Opera, Schoenberg, Bartok, and Stravinsky. The topics will vary from quarter to quarter; hence if the topic varies each course may be repeated for credit.

140 Studies in Medieval Music (1)

141 Studies in Renaissance Music (1)

142 Studies in Music of the Baroque Period (1)

143 Studies in Music of the Classical Period (1)

144 Studies in Music of the Romantic Period (1)

145 Studies in Music of the 20th Century (1)

150 Advanced Composition (1)
May be repeated for credit.

152A-B-C History of Opera (1-1-1)

155A-B-C Form and Analysis (1-1-1)
Offered alternate years with Music 135A-B-C.

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

160 University Orchestra (1)

161 Chamber Ensemble (½)

162 University Chorus (½)
To be taken concurrently with Music 68 or 168.

163 Vocal Performance (½)
(By audition only.) Music 162 must be taken concurrently.

164 Opera Workshop (½)

165 Advanced Literature for Keyboard (½)

166 Advanced Literature for String Instruments (½)

167 Advanced Literature for Wind Instruments (½)

168 Advanced Vocal Literature (½)

169 Conducting (1)

170 Orchestration (1)

171 Chamber Singers (½)

172 Chamber Orchestra (½)

173 Theatre Orchestra (1)

180 Music Criticism (1)

190 Studio Tutorials in Music (½)
Piano, strings, winds, voice, conducting.

191 Tutorial in Music (1)
May be repeated for credit.

198 Music Workshop (1)
May be repeated for credit.

GRADUATE COURSES IN MUSIC

All graduate courses may be repeated for credit.

200 Bibliography and Research (1)

210 Graduate Studio: Vocal Literature (1)

211 Graduate Studio: Instrumental Literature (1)

212 Graduate Studio: Composition (1)

220 Seminar in History of Music (1)

230 Seminar in Contemporary Music (1)

240 Graduate Projects (1)

250 Directed Reading (1)

260 Thesis (1)

COURSES IN FINE ARTS

20A-B-C The Arts and Man (1-1-1)
Major accomplishments of man in art, dance, drama, and music.

Beachgoers at Newport around the turn of the century.

SCHOOL OF HUMANITIES

Robert L. Montgomery
Acting Dean

Undergraduate Study: Associate Dean, Theodore Brunner
Graduate Study: Robert L. Montgomery

UNDERGRADUATE PROGRAMS

The School offers undergraduate majors in classics, classical civilization, comparative literature, English, French, German, history, humanities, linguistics, philosophy, Russian, and Spanish. It offers elementary courses in Chinese, Hebrew, Italian, and elementary and upper-division courses in Portuguese.

Students with degrees in the various majors offered by the School proceed to graduate study in numerous fields including business, law, education, and medicine, as well as directly into a great variety of professions.

A corps of lower-division advisors is designed to meet the special needs of freshmen and sophomores. The advisors are particularly interested in undergraduate education and especially knowledgeable about University regulations, requirements in and outside the School, course content, options to major, and other matters that may present difficulties. Students in the School do not elect majors until the last quarter of the sophomore year, at which time each student is assigned an advisor in the major chosen. Until that time the lower-division advisor is prepared to help the student keep options to major open as long as possible, plan a coherent program of humanistic study, and reach an eventual decision about the major.

Each major in the School sets certain requirements. Generally each major offers a year's course which is both an introduction to the discipline and a prerequisite to the major itself. Students who plan wisely with their advisors will construct programs that include a good number of such courses.

Undergraduate students in the School of Humanities participate in the affairs of the School in a number of ways: by serving on committees of various departments, by sitting with the faculty in its meetings, and by serving on the student undergraduate advisory committee, which directly advises the Dean.

Requirements for a Bachelor of Arts Degree

University Requirements: See page 22.

School Requirements

Humanities 1A-B-C, taken in the freshman year (students who must take Subject A will take Humanities 1A-B-C in the sophomore year);

Two years of work in a single acceptable foreign language (through 2C) or equivalent competence;

Quarterly consultation with an assigned lower-division advisor and his written approval for the program of study decided upon.

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. Ph.D. degrees are planned in Classics and 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. Further, several departments offer a few students the opportunity to do part of their work for the Ph.D. in a related discipline.

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. 279).

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., 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.
History	B.A., M.A., Ph.D.
Humanities	B.A.
Linguistics	B.A.
Philosophy	B.A., M.A., Ph.D.
Russian	B.A.
Spanish	B.A., M.A., Ph.D.

Undergraduate Honors

Students are nominated for honors on the basis of scholarship, research, and special achievements. Generally, to be nominated the student must achieve a grade-point average of at least 3.20, perform with distinction on such comprehensive examinations as are given in the major, and receive strong recommendation from faculty members.

UNDERGRADUATE MAJOR IN HUMANITIES

The major in Humanities accommodates students who want to organize their undergraduate education around some special interest in a topic, a field, or a problem which is interdisciplinary in scope. At the end of his sophomore year the student, in consultation with the Humanities Major Committee, will devise an individually tailored set of "course requirements" not all of which need be offered in the Humanities School. The Committee will assign him an advisor on the basis of the student's own preference. At the end of his senior year the student will prepare under the advisor's supervision a long paper in the area of his special major. Inquiries by third-quarter sophomores should be addressed to Guy Sircello, Associate Professor of Philosophy, Chairman of Humanities Major Committee.

UNDERGRADUATE COURSES IN HUMANITIES

Humanities 1A-B-C The Humanities Core Course (2-2-2)
A two-credit year-long sequence required of all Humanities majors and open only to those who have passed the Subject A requirement. Majors who have satisfied the Subject A requirement at entrance are required to take the course in their freshman year; majors who have not satisfied the Subject A requirement at entrance are required to take the course as sophomores, only after completing Subject A.

From year to year different problems of mutual concern to the various humanistic disciplines are taken up, with emphasis placed on the careful reading of certain major texts which bear on these problems and on the development of the ability to think clearly and write well about the issues they raise. A writing program is an integral part of the course.

Humanities 2 (1)
A course offered on the general subject of the nature of humanistic disciplines.

Humanities 101A-B-C (1-1-1), may be repeated when subject changes.
The undergraduate humanities colloquia. Offered in various subjects of an interdisciplinary nature, generally for juniors. In 1972-73 it will include:

Images and Manifestations of Socialism.
An historical and critical survey of Marxian perspectives on capitalism and socialism. Fall quarter: an introduction to classical Marxism. Winter quarter: an examination of the Soviet and Chinese experiments and their historical implications for socialism in other parts of the world. Spring quarter: an inquiry into the prospects for varieties of capitalism and socialism in the United States and the West, the USSR and Eastern Europe, and the third world. Open to upper-division students with permission of the instructor. (Same as Comparative Culture 116A-B-C.)

Humanities 197 (varying credit)
Individually arranged field study.

Humanities 198 (varying credit)
Directed group study on special topics.

Humanities 199 (varying credit)
Directed research for senior Humanities majors.

GRADUATE COURSES IN HUMANITIES

Graduate courses in Humanities are under the direction of the School's Associate Dean for Graduate Study.

These courses are designed for all graduate students in the School of Humanities, with the exception that students in philosophy may not count Humanities 230 as part of their degree program.

Humanities 200, 210, 220, and 230 introduce study in four disciplinary areas, either to students planning a degree in history or one of the literature departments or to those seeking familiarity with disciplines other than their own.

Some students may offer an interdisciplinary modification of their degrees with permission of the departments or programs concerned. Such students will take half or more of their courses in a major field, with the remainder in other fields and in Humanities. At least one of the courses outside the major field will be in the Humanities series 200-230 and another will be a course listed as Humanities 291. Those interested in an interdisciplinary degree should contact the Associate Dean for Graduate Study or the Graduate Advisor in their major department.

Humanities 200 The Nature and Theory of History (1)
An introduction to various approaches to historical inquiry. The course deals with speculative and critical history, as well an analytical history. (Same as History 200A.)

Humanities 210 Topics and Methods in Linguistics (1)
A study of linguistic theories and methods of language description, linguistic structure, language change, typology of grammars, theories of meaning. For the student unfamiliar with the basic principles of linguistics. (Formerly offered under Humanities 291.)

Humanities 220 Literary Theory (1)
An introduction to the role of criticism and aesthetics in literary study for beginning graduate students. Readings from Continental, English, and American theorists. (Same as Criticism 220A.)

Humanities 230 Philosophical Analysis (1)
An introduction to the fundamentals of philosophical analysis through the application of techniques to selected problems in the various "fields" of philosophy: ethics, philosophy of science, political philosophy, aesthetics, philosophy of religion.

Humanities 291 (1)
Under this number the School offers a group of seminars and colloquia in interdisciplinary topics or in topics in a particular discipline that are designed for study by students in other disciplines.

DEPARTMENT OF CLASSICS

UNDERGRADUATE PROGRAMS

The Department of Classics aims to provide for the undergraduate student an exposure to the origins and heritage of western civilization. The Department is committed to a twofold purpose: (1) to transmit the culture, ideals, and attitudes of classical civilization through the Greek and Roman languages and literatures and (2) through courses in classical literature in translation, civilization, mythology, and religion to help students appreciate the vast and pervasive influence of Greece and Rome on our own civilization. The Department offers both a major in Classics with either an emphasis in Greek or Latin, and a major in Classical Civilization. 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 eight courses taken within the department, including a minimum of one year of either classical language. The student is also required to take three courses in fields closely related to the field of Classics (one course each in ancient history, ancient philosophy, and ancient 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 Classics or Classical Civilization should obtain a copy of the pamphlet "The Classics" and/or "Major in Classical Civilization" from the department 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. 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: See page 125.

Departmental Requirements

Two separate majors: Classics (with an emphasis in either Greek or Latin) and Classical Civilization.

Classics (Greek emphasis): Greek 2A-B-C; three literature courses on the Greek 100 level; Greek 110; Latin 1A-B-C; Latin 2A-B-C.

Classics (Latin emphasis): Latin 2A-B-C; three literature courses on the Latin 100 level; Latin 110; Greek 1A-B-C; Greek 2A-B-C.

Classical Civilization: Latin (or Greek) 1A-B-C; Classics 151, 152, 153; two courses from Classics 141, 160, 170; one ancient history course; one ancient philosophy course; one ancient art course.

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 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.

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.

There are no formal course requirements for the Ph.D. in Classics. However, the Department offers a single seminar, Classics 220, designed to accommodate varying 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.

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. By the beginning of the second year, he is expected to pass reading examinations in two modern foreign languages (ordinarily, French and German). 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 monthly, based on progress dossiers containing copies of the student's written work, reports by the preceptor as well as the seminar instructor, and statements by temporary faculty supervisors. The entire Classics faculty acting as an evaluation committee makes 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

Lewis A. Sussman, Ph.D. University of North Carolina, *Assistant Professor of Classics and Acting Chairman of the Department*

Luci Berkowitz, Ph.D. The Ohio State University, *Associate Professor of Classics*

Theodore F. Brunner, Ph.D. Stanford University, *Associate Professor of Classics and Associate Dean of Humanities*

Peter Colaclides, Ph.D. University of Athens, *Professor of Classics*
Richard I. Frank, Ph.D. University of California, Berkeley, *Associate Professor of Classics and History*
Barbara Gold, M.A. University of North Carolina, *Lecturer in Classics*
Ronald F. Kotrc, Ph.D. University of Washington, *Assistant Professor of Classics*
Robert M. McClure, Ph.D. University of California, Los Angeles, *Assistant Professor of Classics*
David R. Thomason, M.A., M. Phil. University of London, *Lecturer in 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.

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 20A-B-C Intensive Greek (1-1-1)
Offered in summer session only, this course series covers, in eight weeks, the equivalent of Greek 1A-B-C.

Greek 99 Special Studies in Greek (1)
May be repeated. Prerequisite: Consent of instructor

Greek 100 Seminar in Greek Literature (1-1-1)
Subject matter will vary from year to year. Course may be repeated for credit. Prerequisite: Greek 2C or equivalent. (Not offered in 1972-73.)

Greek 110 Greek Prose Composition (1)
Prerequisite: Greek 2A or equivalent. (Not offered in 1972-73.)

Greek 198 Directed Group Study (1)
An investigation of special topics in Greek culture and civilization through directed reading and research. Consultation with instructor necessary prior to registration. May be repeated.

Greek 199 Independent Studies in Greek (1)
Consultation with instructor necessary prior to registration. May be repeated.

Latin 1A-B-C Fundamentals of Latin (1-1-1)
The elements of Latin grammar and syntax, with selected readings. 1C is devoted to selected readings from Roman authors.

Latin 2A-B-C Intermediate Latin (1-1-1)
Readings from Roman authors. 2A: Catullus; 2B: Cicero; 2C: Ovid. Prerequisite: Latin 1C or equivalent.

Latin 20A-B-C Intensive Latin (1-1-1)
Offered in summer session only, this course covers, in eight weeks, the equivalent of Latin 1A-B-C.

Latin 99 Special Studies in Latin (1)
Consultation with instructor necessary prior to registration. May be repeated.

Latin 100 Seminar in Latin Literature (1-1-1)
Subject matter will vary from year to year. Authors for 1972-73: Caesar, Lucretius, and Vergil. May be repeated for credit. Prerequisite: Latin 2C or equivalent.

Latin 110 Latin Prose Composition (1)
Prerequisite: Latin 2A or equivalent.

Latin 120 Introduction to Vulgar and Medieval Latin (1)
A study of the morphological, syntactical, and lexical developments in post-Classical Latin as illustrated by the reading of a variety of texts. Prerequisite: Latin 1C or consent of the instructor.

Latin 198 Directed Group Study (1)
An investigation of special topics in Roman culture and civilization through directed reading and research. Consultation with instructor necessary prior to registration. May be repeated.

Latin 199 Independent Studies in Latin (1)
Consultation with instructor necessary prior to registration. May be repeated.

Classics 99 Special Studies in Classics (1)
Consultation with instructor necessary prior to registration. May be repeated.

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. Same as History 102. (Not offered in 1972-73.)

Classics 151 Introduction to Classical Literature and Civilization (1)
Based upon extensive readings from Greek and Roman authors in English translation, this course attempts to present the writers in the context of the historical, cultural, philosophical, and artistic attitudes of the ancient world.

Classics 152 Introduction to Classical Archaeology (1)
This course will describe the range and variety of materials which can be used as evidence for a reconstruction or a recovery of the Greek and Roman civilizations and the methods by which information is inferred from the artifacts. An effort will be made to emphasize particular facets of daily life, rather than an overview of cultural development.

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. All readings are in English.

Classics 160 Topics in Classical Literature in English Translation (1)
The subject matter will vary from year to year. 1972-73: A comparative study of the characters of Electra, Phaedra, and Medea as presented in the plays of the three Greek tragedians and Seneca. May be repeated for credit.

Classics 170 Science in Antiquity (1)
Study of Ancient Greek Physical, Medical, and Biological Science. Illustrated lectures, discussion. All readings in English.

Classics 198 Directed Group Study (1)
Investigation of special topics in Classical studies through directed reading and research. Consultation with instructor necessary prior to registration. May be repeated.

Classics 199 Independent Studies in Classics (1)
Consultation with instructor necessary prior to registration. May be repeated.

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 departmental affairs through two elected student committees, one of undergraduates, one of graduates, which are concerned primarily with matters of personnel and curriculum. The committees meet periodically with faculty committees of the Department, and the recommendations of student committees become matters of record which accompany any recommendations emanating from the Department. Each quarter, all students taking classes within the Department have the opportunity to evaluate the particular course and teacher.

UNDERGRADUATE PROGRAMS

The Department offers to the undergraduate essentially three areas of study:

1. **The Program in Literary Criticism,** where the emphasis is upon formal study of the variety of critical approaches and the reading and criticism principally of English and American literature.

2. **The Program in Writing,** which offers an emphasis on formal work in the writing of poetry, prose fiction, and/or drama, parallel readings, and a substantial experience in criticism. The aim of the program is to encourage the creative literary powers of the student and to introduce him to the discipline of imaginative writing. The Department also offers work in non-fiction and advanced work in expository writing.

3. **The Program in Comparative Literature,** which, though administratively a part of the Department, is basically interdisciplinary in its orientation, drawing on faculty and other resources from the fields of the various modern and classical literatures and drama. 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. 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 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 origins, for his own pleasure or for professional use.

Since the Department believes that a student of literature should recognize the importance of understanding theoretical problems in literature, of developing a broad acquaintance with literary texts, and of experiencing the problems of literary creation at first hand, the Department invites the student to take work in all three of its Programs, with an emphasis in one of the first two (toward a Bachelor's Degree in English) or a major in the third (toward a Bachelor's Degree in Comparative Literature).

By not stipulating a variety of prerequisites the Department also invites students from all schools of the University to take advantage of its offerings. An acceptable level of ability in English composition is the only prerequisite for many of the introductory undergraduate English courses.

Many of the courses will vary in specific content from year to year, depending on the plans of individual teachers, since the department recognizes that no course can possibly treat all the major authors and works relevant to a given period or topic.

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.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

Departmental Requirements

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

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

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

About twelve literature or allied courses in addition, of which ten must be upper division: normally these will include CR 100A-B, CL 100, 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 in Comparative Literature (see below).

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).

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: his ability to close intelligently, on the spot, with any given piece of literature; his knowledge of the general outlines of English and American literary history, including the more significant facts and dates; his understanding of the terms appropriate to literary discussion; and his knowledge of the works on the reading list. The examination will ordinarily require four hours and will be given on two non-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 to test his knowledge of literature, critical theory, and literary history and to investigate his competence in practical criticism as well as his ability to write clearly, succinctly, and convincingly on literary matters. Primarily, the student will be asked questions on works from the Comparative Literature Reading List and about the ways in which these works relate to each other.

The material describing the Senior Comprehensive Examination in English is also applicable (see above). The main difference between the two examinations lies in the reading lists on which the examinations are based.

GRADUATE PROGRAMS

The Department's three principal areas of work on the undergraduate level – criticism, comparative literature, and the art of writing – are reflected in the graduate programs: the M.A. and the Ph.D. in English with specific attention to criticism, the M.A. and the Ph.D. in Comparative Literature, and the M.F.A. in Writing. 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. 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, and a deliberate effort is made to maintain close administrative and intellectual ties between the programs.

The Department assumes that there must be a vital relationship between professor and candidate; specific requirements for graduate degrees will be reached by consultation among members of the faculty and the candidate himself. The first-year graduate student or the candidate for the Master of Fine Arts in Writing plans a program with his advisor; the candidate for the Ph.D. plans with his advisor and a two-man committee. Candidates for literary degrees are encouraged to study philosophy, history, foreign languages and literatures, and the fine arts.

Applicants for graduate degrees in English and Comparative Literature must submit scores for the Graduate Record Examination (GRE) and the Advanced Test, Literature (ATL).

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, and it believes that graduate departments should be training college teachers as well as scholars – indeed, that teaching and most literary scholarship complement one another. Thus the Department has initiated a program by which all its Ph.D. candidates, in English as well as in Comparative Literature, may gain supervised training as teachers in the arts of writing and of criticism at various undergraduate levels as part of the formal seminar work required for the degree. M.F.A. candidates also have the opportunity of participating in this program.

All those interested in graduate study in the Department should obtain the brochure on graduate programs from the Departmental Office.

English

Master of Arts in English

Each candidate for the M.A. will be assigned to a graduate advisor who will supervise his program. The M.A. plan of study includes (1) the completion of course work, as advised, for three quarters or the equivalent; (2) demonstrated proficiency in reading a designated foreign language; (3) the passing of a written examination upon a designated reading list. Exceptional students may be exempted from taking the examination by petitioning the Graduate Committee, which will review the student's performance and qualifications in arriving at its decision. All M.A. candidates will be required to know fundamental facts about the history of the English language. The candidate must take all of his formal work in courses, seminars, or conferences limited to graduate students.

Master of Fine Arts in English

The Master of Fine Arts (M.F.A.) in English is a degree awarded for creative writing in poetry, the short story, the novel, or drama.

The M.F.A. 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 may 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, and competence in the second well before the general examinations. Satisfactory work in courses in which literary translation is actually practiced must fulfill at least one of the language requirements. The necessity of competence in languages such as Old English is determined by the advisory committee in the light of the student's total program. All candidates for the Ph.D. will be required to know fundamental facts about the history of the English language and basic linguistic theory.

Upon completion of course work the student normally presents himself for general examinations on literary theory and criticism; on some particular literary form, genre, style, theme, or structure; a historical period; a group of authors; and a specific topic. The first four of these examinations are written, the fifth oral. The student has the opportunity to present his own choices for the examination, but the choices must enable him to demonstrate breadth of knowledge and literary understanding and therefore must be approved by his advisory committee. Certain alternatives to this series of examinations may be allowed in special cases.

When the student satisfactorily completes the general examination, he is admitted to candidacy for the degree. As soon after completion of the general examination as is practicable, the student presents to his advisory committee for its approval an essay leading into his dissertation. Submission and acceptance of the dissertation complete the work for the Ph.D. All work for the Ph.D. degree must be in courses, seminars, or conferences limited to graduate students.

Comparative Literature

There are at least four avenues by which the UCI student may approach graduate work in Comparative Literature; students with Bachelor's Degrees from other institutions should have equivalent training:

a) The undergraduate major in Comparative Literature described above.

b) A normal English major in criticism, provided a sufficient background in at least one foreign language is gained. A beginning on a second foreign language is highly recommended.

c) A normal major in drama, with same provisos as b).

d) A normal major in a foreign language, provided a sufficient general background in world literature is gained.

Make-up work will be required before graduate studies can begin if one of these avenues has not been taken.

At the graduate level, the study of Comparative Literature becomes more specialized, with the student engaged 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. French and German are usually required for all doctoral candidates, since these languages along with English are the accepted tools of international literary scholarship. A classical language may prove indispensable for work in many traditional fields of literary study, and the scholar's own specialty may require him to master other languages. 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 which, after a suitable theoretical preparation, the student plans and carries out a high-quality translation of a literary text. 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 a project in either French or German and appropriate graduate-level work in English, foreign languages, drama, comparative literature, and other areas as counseled by the advisor. Soon after beginning graduate work the student, with the advice and approval of his advisor, will decide on a Field of

Specialty which he wishes to emphasize in his progress toward the M.A. degree. (Normally this choice will be a kind of general or preliminary step toward the selection of an Area of Specialty for the Ph.D.).

Graduate study in Comparative Literature requires an exceptional facility in foreign languages, and the student should not attempt a Master's Degree without a thorough knowledge of one foreign language and literature and a considerable knowledge of a second language. Normally the greatest part of the student's work will involve the study of literary texts in the original languages.

At the end of his course work, normally about nine courses at the graduate level, the student will be examined in the following categories: the elected Field of Specialty; a general knowledge of world literature, including English and American, somewhat more extended than expected of the undergraduate student; and a knowledge of literary theory and techniques of literary study on a level appropriate for the graduate scholar. Exceptional students may be exempted from taking the examination by petitioning the Graduate Committee, which will review the student's performance and qualifications in arriving at its decision.

Doctor of Philosophy in Comparative Literature

The doctoral program is designed to prepare the student for a professional career as a scholar and critic of literature. Details of the doctoral program in Comparative Literature may be obtained from the Director. Normally the degree requires two years of course work (usually a minimum of three 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

Harold Toliver, Ph.D. University of Washington, *Professor of English and Chairman of the Department*

Hazard Adams, Ph.D. University of Washington, *Professor of English and Vice Chancellor – Academic Affairs*
Howard S. Babb, Ph.D. Harvard University, *Professor of English*
Joseph N. Bell, B.A. University of Missouri, *Lecturer in English*
James L. Calderwood, Ph.D. University of Washington, *Professor of English*
Pete E. Clecak, Ph.D. Stanford University, *Assistant Professor of English and Comparative Culture*
Ralph A. Flores, Ph.D. Princeton University, *Assistant Professor of Comparative Literature*
Alexander Gelley, Ph.D. Yale University, *Associate Professor of Comparative Literature and Director of the Comparative Literature Program*
Jesse Gellrich, Ph.D. State University of New York at Buffalo, *Assistant Professor of English*
Harvey Gross, Ph.D. University of Michigan, *Professor of English*
Oakley Hall, M.F.A. University of Iowa, *Professor of English and Director of the Writing Program*
Carl Hartman, M.F.A. University of Iowa, *Senior Lecturer in English and Assistant Vice Chancellor – Academic Affairs*
Donald Heiney, Ph.D. University of Southern California, *Professor of Comparative Literature*
Renée Riese Hubert, Ph.D. Columbia University, *Professor of Comparative Literature and French*
Murray Krieger, Ph.D. Ohio State University, *Professor of English and Director of the Program in Critical Theory*
Frank Lentricchia, Ph.D. Duke University, *Associate Professor of English*
Jay Martin, Ph.D. Ohio State University, *Professor of English*
James McMichael, Ph.D. Stanford University, *Associate Professor of English*
Robert L. Montgomery, Ph.D. Harvard University, *Professor of English and Acting Dean of Humanities*
Robert L. Peters, Ph.D. University of Wisconsin, *Professor of English*
Barbara L. Reed, Ph.D. Indiana University, *Assistant Professor of English*
Edgar T. Schell, Ph.D. University of California, Berkeley, *Associate Professor of English*
Myron Simon, Ed.D. University of Michigan, *Associate Professor of English and Education and Vice Chairman of the Department*
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, *Associate Professor of English*
Max Wei Yeh, Ph.D. University of Iowa, *Assistant Professor of Comparative Literature*

UNDERGRADUATE COURSES IN ENGLISH AND COMPARATIVE LITERATURE

Subject A: A remedial course taken for no credit in the fundamentals of writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, spelling, and the frequent writing of papers. (For a description of the Subject A requirements, refer to p. 22.) Satisfaction of Subject A requirement is a prerequisite to all other courses in the Department and to Humanities 1A-B-C.

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. Same as Drama 32.

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.

CR 100A Literary Theory and Criticism (1)
Required of juniors beginning majors in English and Comparative Literature. A series of lectures and discussions devoted to the theoretical dimensions of literary criticism as reflected in major theorists from Plato to the present.

CR 100B Undergraduate Seminar in Literary Theory (1)
Open to upper-division majors in English and Comparative Literature only, and required of them soon after completion of CR 100A. Sections limited to 15 students. Each instructor announces a theoretical topic deriving from CR 100A and explores it through a number of theoretical and literary texts.

CL 100 Undergraduate Seminar in Literary Theory and Practice (1)
Open to upper-division majors in English and Comparative Literature only, and required of them. Sections limited to 15 students. Each instructor announces a topic that joins theoretical speculation about literature with the practical criticism of individual literary texts.

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. Treats interdisciplinary topics of various kinds (e.g., literature and politics, literature and religion, literature and science, literature and the other arts).

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)
By consent. Workshop situation: discussion of student writing and of relevant literary texts.

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. Same as Drama 112.

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. Prerequisites: E 28A-B-C, CL 50A-B-C, Hum. 1A-B-C, or the equivalent.

E 181 The Structure of English (1)

E 184 History of English Language (1)

CL 185 Problems in Comparative Literature (1)
By consent. Limited to 15 students. Specific topic will vary. Primarily for senior majors in Comparative Literature, but open to other qualified students.

E 187 Selected Topics in English Linguistics (1)

E 198 Special Topics (1)
Directed group study of selected topics. By consent, by arrangement. May be repeated.

E 199 Reading and Conference (1)
By consent, by arrangement. May be repeated.

CL 198 Special Topics (1)
Directed group study of selected topics. By consent, by arrangement. May be repeated.

CL 199 Reading and Conference (1)
By consent, by arrangement. May be repeated.

GRADUATE COURSES IN ENGLISH AND COMPARATIVE LITERATURE

All graduate courses may be repeated when the topic varies. Enrollment in each graduate course requires the consent of the instructor. 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.

In addition to the following courses, graduate students in the Department of English and Comparative Literature may find these Humanities courses of special interest: Humanities 200 (Historical Theory and Analysis), Humanities 210 (Topics and Methods in Linguistics), and Humanities 230 (Philosophical Analysis).

E 200 Selected Topics in English Linguistics (1)

E 210 Studies in Literary History (1)

CL 210 Comparative Studies (1)

CR 220A-B-C Studies in Literary Theory and Its History (1-1-1)
CR 220A same as Humanities 220.

CR 220 Studies in Criticism and Theory (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)

WR 251 *Writing in Conference* (½ to 2)

E 290 Reading and Conference (½ to 1½)

CL 290 Reading and Conference (½ to 1½)

E 291 Guided Reading Course

CL 291 Guided Reading Course

E 299 Dissertation Research

CL 299 Dissertation Research

E 398 The Teaching of English
Restricted to fifth-year students in the Teacher Certification program and to others with consent of Department's Graduate Chairman.

E 399 Seminar in University Teaching (1)
By consent. Ph.D. candidates in English and in Comparative Literature may enroll three times in English 399 before taking the doctorate. Except for teaching assistants, however, no student will enroll in this course during his first year of graduate study. (Students enrolling with an M.A. from another institution may plan to take 399 twice their first year.) Graduate teachers are assigned by the Graduate Committee to teach half-sections of lower-division courses or to serve as interns in upper-division courses. M.F.A. candidates in their second year of study may apply to the Graduate Committee to participate in E 399.

DEPARTMENT OF FRENCH AND ITALIAN

The basic program brings the student to participate in the creative process of language, to conceptualize in French or Italian as he learns to understand, speak, read, and write. All classes are taught entirely in the foreign language, 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 IN FRENCH

At the intermediate lower-division level, texts of contemporary literary and social interest provide the focus for advanced conversation, reading, and composition.

After the second year, courses in speaking (conversation and phonetics) and writing enable the student to attain a greater degree of proficiency, preparing him for further study in French literature and linguistics and in French Civilization and Culture.

In the lower-division courses in literature, complete texts are studied by genre: poetry in the fall; theatre in the winter; the novel in the spring. The student learns to analyze and interpret different types of creative literature and is introduced to various critical techniques. At the upper-division level, literature courses may emphasize a single author, a generation, or a genre within an historical period. The content of these courses changes yearly according to the interests of both faculty and students. Senior seminars are offered periodically to discuss literary problems which cannot be dealt with in depth in the regular offerings; among these are African Literature in French, Structuralism.

Upper-division courses in Civilization and Culture explore aspects of French history, intellectual thought, and the arts. Courses are offered with an historical emphasis (The World of the Renaissance in France; The Age of Louis XIV) and with a comparative orientation (Poetry and Painting; Fantastic Art and Literature; Movie and Novel).

Upper-division courses in linguistics introduce students to aspects of the structure of the French language and to the application of linguistic techniques to problems of literary analysis.

Students are placed in elementary and intermediate courses according to their years of previous study and their grades; no placement examination is given. One year of high school is equated with one quarter of work at UCI. A student may not go back more than one quarter and receive credit.

Students are encouraged to participate in programs of study abroad during the junior year.

Requirements for the Bachelor's Degree in French

University Requirements: See page 22.

School Requirements: See page 125.

Departmental Requirements

French 10A-B, 12A-B-C, and a) seven upper-division courses of which at least five must be in literature, or b) seven upper-division courses of which at least four must be in Civilization and Culture.

UNDERGRADUATE PROGRAM IN ITALIAN

Third and fourth-year offerings provide an introduction to Italian literature and culture. This material also serves as a basis for training in composition, conversation, phonetics.

Tutorial and seminar courses are available for advanced students. Students are encouraged to pursue their interests through a major in Humanities which combines Italian literature, culture, history, art, music.

GRADUATE PROGRAMS IN FRENCH

The Department stresses understanding far more than encyclopedic knowledge, experimentation with various critical approaches rather than the perpetuation of a tradition, creativity rather than conformity.

Master of Arts in French

The Master of Arts degree is considered to be a step towards the Ph.D. degree; the Master's examination functions as a qualifying exam for the doctoral program. Most

candidates take a minimum of eleven graduate courses, with at least six in literature, one in linguistics, and one in writing and style. Particularly well-prepared students may receive special permission to take a minimum of nine courses and to write a short thesis, for which two course credits are given. Individual programs are arranged in consultation with the graduate advisors. Proficiency in a foreign language other than the major language is required (proficiency is defined as the equivalent of the level attained at the end of course 2C).

All M.A. candidates are required to pass a written and oral examination. The student writes essays where he demonstrates his ability to discuss literary texts — which may or may not have been part of the class program — and to establish relationships between literary works of different periods, genres, or authors.

Doctor of Philosophy in French

Upon the student's successful completion of the qualifying exams for the doctoral program, or his admission to the program with a Master's Degree from an accredited institution, a Guidance Committee is appointed to advise the candidate in his choice of courses and to help him prepare for his comprehensive examinations and his dissertation. The examination committee is composed of five members, one of whom is in another department, in fields closely related to the student's interest and projected area of specialization; one member of the committee will be expected to direct the dissertation.

Language Requirements: A reading knowledge of two foreign languages relevant to the student's area of specialization and subject to the approval of the Department.

Course Requirements: A minimum of 18 graduate courses or seminars in French beyond the B.A. including a course in literary criticism; two graduate courses in French linguistics, one diachronic and the other synchronic, depending on courses taken for the M.A.; and a minimum of three graduate courses outside the Department in areas related to the field of specialization.

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.

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.

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, Lecturer in French*
David Carroll, Ph.D. The Johns Hopkins University, *Assistant Professor of French*
Andrée G. Darling, *Visiting Scholar*
Henri Diament, Ph.D. Columbia University, *Assistant Professor of French*
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*
Alice M. Laborde, Ph.D. University of California, Los Angeles, *Associate Professor of French*
Therese B. Lynn, Ph.D. University of Illinois, *Assistant Professor of French*
Franco Tonelli, Ph.D. Louisiana State University, *Associate 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 Grammar Review (1-1)
Systematic review of grammar with written compositions on themes from readings chosen to introduce the student to aspects of literary analysis – prose and poetry. Prerequisite: Completion of French 2C or equivalent.

11 French Phonetics (1)

12A Introduction to Poetry (1)

12B Introduction to Theatre (1)

12C Introduction to Novel (1)
In this series of courses (12A-B-C) students learn to analyze and interpret creative literature by genre and are introduced to various critical techniques.

13 Conversation (1)

UPPER-DIVISION COURSES IN FRENCH

The prerequisite for all upper-division literature courses is French 12A-B-C or the equivalent. The content of all upper-division literature courses – which may emphasize a single author, a generation, or a genre within an historical period – changes yearly. Students should consult the offerings in linguistics under the Program in Linguistics.

105 Advanced Composition and Style (1)

110A-B-C French Civilization (1-1-1)

112A-B-C French Culture (1-1-1)

116A-B-C Readings in Sixteenth-Century French Literature (1-1-1)

117A-B-C Readings in Seventeenth-Century French Literature (1-1-1)

118A-B-C Readings in Eighteenth-Century French Literature (1-1-1)

119A-B-C Readings in Nineteenth-Century French Literature (1-1-1)

120A-B-C Readings in Twentieth-Century French Literature (1-1-1)

130 Junior-Senior Seminar in French Literature (1)
May be repeated. Prerequisites: Two upper-division literature courses.

131 Senior Seminar in Linguistics (1)
May be repeated. Prerequisite: Linguistics 50 or consent of instructor.

140A-B-C Readings in French Literary Genre (1-1-1)

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

199 Special Studies in French (1)
May be repeated.

GRADUATE COURSES IN FRENCH

The content of these courses changes yearly. Students should also consult the offerings of the Program in Linguistics.

In addition to the following courses, graduate students in French might find these Humanities courses of special interest: Humanities 200 (Historical Theory and Analysis), Humanities 210 (Topics and Methods in Linguistics), Humanities 220 (Literary Theory), and Humanities 230 (Philosophical Analysis).

200 Selected Topics in French Linguistics (1)
May be repeated.

201 History of the French Language (1)
Prerequisite: Fundamentals of Latin.

202 Contrastive French Phonology (1)

203 Contrastive French Morphology and Syntax (1)

208 Stylistics (1)

210A-B-C Studies in Medieval Literature (1-1-1)

216A-B-C Studies in Renaissance Literature (1-1-1)

217A-B-C Studies in Baroque and Classical Literature (1-1-1)

218A-B-C Studies in Eighteenth-Century Literature (1-1-1)

219A-B-C Studies in Romanticism and Symbolism (1-1-1)

219D-E Studies in Naturalism and Realism (1-1)

220A-B-C Contemporary Novel (1-1-1)

221A-B-C Contemporary Poetry (1-1-1)

222A-B Contemporary Theater (1-1)

230 Studies in Dramatic Literature (1)
May be repeated.

231 Studies in Fiction (1)
May be repeated.

232 Studies in Non-Fictional Prose (1)
May be repeated.

233 Studies in Poetry and Poetics (1)
May be repeated.

240 Studies on a Major Writer (1)
May be repeated.

260A-B Literary Criticism (1-1)

270 Writing and Style (1)

290 Research in French Language and Literature (1)
May be repeated.

299 Dissertation Research

LOWER-DIVISON COURSES IN ITALIAN

1A-B-C Fundamentals of Italian (1-1-1)
Students are taught to conceptualize in Italian as they learn to understand, read, write, and speak. Classes are conducted entirely in Italian and meet daily. Language laboratory attendance is required.

2A-B-C Intermediate Italian (1-1-1)
Texts of contemporary literary or social interest provide the focus for more advanced conversation, reading, and composition. Classes are conducted entirely in Italian. Prerequisites: Normally three years of high school Italian or one year of college Italian.

10A-B Italian Language and Civilization (1-1)
Systematic review of grammar with written and oral composition on topics chosen from readings on Italian culture and civilization. Prerequisite: Completion of, at least, Italian 2A or equivalent.

99 Tutorial in Italian Literature and Culture (1)

UPPER-DIVISON COURSES IN ITALIAN

199 Tutorial in Italian Literature and Culture (1)

DEPARTMENT OF GERMAN

UNDERGRADUATE PROGRAM

Since Western Culture is largely determined by the interaction of various peoples who express themselves in different languages, we can understand ourselves and our social setting only if we transport ourselves out of our habitual linguistic and cultural environment. The study of a language closely related to but sufficiently different from English, such as German, and the study of the social development of German-speaking peoples provide a view of our world which will transcend parochialism. Accordingly, the Department offers a program for majors based on courses in which the emphasis will be on the study of German language and literature in their social and political setting.

All courses in the Department are taught in German to an extent compatible with the aim of the course. In the basic courses the student will develop an understanding of the nature of the language, based on linguistic principles, while learning the necessary skills. Use will be made of the language laboratory. At the end of the first year, students will have attained mastery of the basic structure of the language.

At the intermediate and advanced levels the student's ability to read and write German will be gradually developed. A third-year course of two quarters will stress composition as opposed to translation. It will be preceded by a course in phonetics which will aim to perfect the pronunciation as well as to introduce historical and dialectical variants. The introductory course in literature, also in the third year, will

familiarize the student with German terminology used in the interpretation of literature. It is assumed that the student is familiar with basic concepts of literature in English.

Students are encouraged to participate in programs of study abroad during the summer and the junior year in Göttingen.

Students entering UCI with previous German training will be given advanced standing as follows. In general, one year of high school work is equated with one quarter of UCI work. Thus students with one, two, three, and four years of high school German will enroll in German 1B, 1C, 2A, and 2B respectively. Exceptions to this placement procedure must have the approval of the director of first- and second-year German instruction.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

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 the written exam and a selection of literary works made by the student himself. In this presentation the student is expected to show his grasp of literary methodology and aesthetic evaluation. Proficiency in a foreign language (defined as the equivalent of the level attained at the end of 2C) other than German is further required for the M.A. degree.

GERMAN FACULTY

William J. Lillyman, Ph.D. Stanford University, *Associate Professor of German and Chairman of the Department*

Theodore Fiedler, Ph.D. Washington University, *Assistant Professor of German*

Herbert Lehnert, Ph.D. University of Kiel, *Professor of German*

Bert Nagel, Ph.D. University of Heidelberg, *Professor of German*

Paul R. Schimmelpfennig, Ph.D. Princeton University, *Assistant Professor of German*

Alan Shaterian, Ph.D. University of California, Berkeley, *Assistant Professor of German*

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)
Two lectures, three intensive drill sessions weekly. The student is 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.

2A-B-C German Reading and Composition (1-1-1)
Lecture, together with large and small group discussions. Introduction to modern German literature and cultural history. One section of 2C will be devoted to Scientific German. Prerequisites: Normally three years of high school German or one year of college German.

UPPER-DIVISION COURSES IN GERMAN

100A Contrastive Phonetics of German and English (1)
Practical work in the contrastive phonetics of German and English as well as study German orthography. Prerequisite: German 2C.

100B-C Advanced Composition (1-1)
The aim of these courses is to help the student develop competence in writing clear expository German. Prerequisite: German 2C.

101 Introduction to Literature (1)
Primary emphasis in this course will be on how to read literature – drama, prose, poetry, the essay. This involves concern for an author's language, the nature of the audience addressed, the role of literary conventions, an author's place in literary tradition, his or her relationship to a cultural context as well as an interest in questions about the nature of literature.

102A Literature and Society Since World War II (1)

102B Literature and Society 1918-1945 (1)
Interdisciplinary introduction 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.

110 Advanced Composition and Stylistics (1)
Besides providing the student an opportunity to gain further competence in writing effective German prose, the course will also introduce him to the study of stylistics. Readings may range from literature and journalism to the social sciences. Prerequisite: German 100C or equivalent.

Courses numbered 117 to 199 may be repeated provided course content changes. Prerequisite for these courses: German 101 or equivalent.

117 Topics in German Literature 750-1750 (1)
Specific course content will be determined by individual faculty members. Example: Literary and Polemical Writing of the Reformation.

118 Studies in the Age of Goethe (1)
Course may deal with individual authors such as Lessing, Goethe, Schiller, Kleist, and Hölderlin or the drama of the "angry young men" of the German 1770's.

119 Studies in Nineteenth-Century German Literature (1)
Course may deal with individual authors such as Büchner, Grillparzer, Keller, and Nietzsche or study broader social-literary phenomena such as the Viennese Folk Theatre.

120 Studies in Twentieth-Century German Literature (1)
Course may deal with individual authors such as Thomas Mann, Brecht, Kafka, Rilke, Grass, or address questions of genre such as the drama of German Expressionism.

150A-B-C German Literature in Translation (1-1-1)
Reading of major German literary works 1750 to the present in translation.

180 Structure and History of the German Language

199 Special Studies in German (1)

GRADUATE COURSES IN GERMAN

Graduate courses in German are divided into three categories. *Introductory Courses,* primarily designed for first-year graduate students, are oriented predominantly to the study of critical methods. *Topical Courses,* not limited to strictly literary subjects, will treat such topics in the cultural history of German-speaking areas as the interrelationship of literature and society in the Weimar Republic and the rise of aestheticism during the age of Goethe. No attempt will be made in these courses to cover exhaustively a particular period in German literary or cultural history. Instead, they will afford in-depth studies of a subject within a period or across period lines. *Seminar Courses* will be preserved specifically for the presentation of new views on a given subject. The same freedom of specific content as explained in the description of Topical Courses applies here. This structuring of graduate courses is to serve as the basis of a proposed Ph.D. program organized on the principle of interdisciplinary studies and the treatment of literature both as an aesthetic phenomenon and a cultural force. For this reason the Department of German and Russian strongly encourages graduate students to enroll in courses given by the English and Comparative Literature Department, the History Department, the Philosophy Department, and other foreign language departments in the School of Humanities.

In addition to the following courses, graduate students in German might find these Humanities courses of special interest: Humanities 200 (Historical Theory and Analysis), Humanities 210 (Topics and Methods in Linguistics), Humanities 220 (Literary Theory), and Humanities 230 (Philosophical Analysis).

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)

DEPARTMENT OF HISTORY

UNDERGRADUATE PROGRAM

The History faculty views its obligations in teaching undergraduates as twofold: the transmission of knowledge, and the development of values associated with a liberal education. The first goal can be attained in three related ways:

a) Helping the student to acquire a reasonable competence in one fairly broad field of history – focusing upon the more significant events, movements, and institutions, including the role of individuals, forces, and factors, and the whys and wherefores.

b) Showing, by way of problems and methods, how historians have worked and are working, including some knowledge of the relationships of History to its sister disciplines which inevitably affect the whole nature of History.

c) Imparting a first hand acquaintance with the evidence and stressing mastery of at least one period or aspect of a student's primary field of interest, so that, as a concomitant, he may acquire some appreciation of the pleasure and excitement of intellectual inquiry.

Our other goal, a liberal education, is intended to open the mind, and to stretch it, not merely to stock it with knowledge. A liberal education should train the student to think – seeking objectivity and intellectual independence; detecting false arguments and bad evidence; constructing a coherent case; seeing more than one side of an issue and deciding which is better or best; making words perform their task with clarity and precision; distinguishing between the important and the unimportant, the relevant and the irrelevant. These are among the more important values which the study of History should help to develop.

Like the lower-division core course, upper-division courses in History are open to students majoring in other fields, though in more advanced courses consent of the instructor may be required. Students who have questions concerning History courses or the History major are encouraged to call upon the departmental office or their advisors for assistance.

The History Department seeks to work closely with its students. Three student representatives, one undergraduate, one graduate, and one teaching assistant (elected by their respective constituencies), sit regularly with the faculty at its department meetings and serve on major departmental committees. Students also play an important role in the evaluation of teaching by the faculty and the teaching assistants.

A Summary Statement of the Undergraduate Major

Twelve courses: the three-quarter lower-division sequence; six upper-division courses (may include one "Independent Study"); one two-quarter Senior Seminar; one Historiography course.

Note: at least three upper-division courses must be related to the area in which the student will select his Senior Seminar. Students who have graduate work in view are urged to have a reading knowledge of a modern European language by their senior year and to seek to use it in the seminar.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

Departmental Requirements

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 190A-B (Senior Seminar).

GRADUATE PROGRAM

At Irvine we are supplementing the traditional concerns of graduate work in History with several new kinds of emphasis, including those upon: mastering the historiographical and philosophical bases of the subject; exploring the comparative and topical approaches to analysis; exploiting the techniques and insights developed by neighboring disciplines; and developing the ability to teach effectively on the university level.

The objective of the program is to provide future historians with the skills, concepts, and perspectives they will need to understand and explain the significance of the past in a world that is changing more and more rapidly. It is our conviction that historians must combine their long-continuing interest in narrative studies with a greater concern for precision in method, relevant generalization, and effective communication if they are to succeed in playing a constructive role.

Master of Arts in History

1. Requirements for Admission

An applicant for admission to the Master of Arts Program in History should have a Bachelor's Degree with the equivalent of an undergraduate major in History. Nonetheless, the Department also welcomes students who have previously specialized in other subject areas and who show promise of sustained and self-disciplined work in History. Note: *Admission to the M.A. program does not automatically certify acceptance for later work on the doctoral level.* Admission to the Ph.D. program is a separate decision made on the basis of performance during the M.A. year.

Typically, a minimum undergraduate grade point average of 3.0 (B) is required for admission, with evidence of better work in History. In addition, all applicants are asked to submit three letters of recommendation, aptitude and achievement scores from the Graduate Record Examination, and examples of written work in History from their undergraduate classes. Students living in Southern California must arrange to come to Irvine for an interview with the Chairman of the Department or the Coordinator of Graduate Advising.

2. Language Requirements

Except in the cases outlined below, a reading knowledge of one useful foreign language is required for the Master of Arts degree. The student must demonstrate his language proficiency either by passing a departmental examination or by achieving a score of at least 500 on the appropriate ETS (Educational Testing Service) examination. He may not enroll in a seminar in European History until he has met the language requirement.

An individual in American or British History, *with his advisor's permission,* may choose to substitute a coherent sequence of courses in communications science, statistics, or comparable studies for his Master's language. If he wishes to count courses which he has taken elsewhere in fulfillment of this requirement, he may be asked to pass special examinations in the subjects specified.

3. Program of Study

After consulting with the Coordinator of Graduate Advising, the student will work out his program with an assigned departmental advisor. If he is intending to proceed to the Ph.D., he should begin at this time to delineate his later studies in order that he may fit his work for the M.A. more usefully into his total program. It is desirable, usually, for such a student to select a field for the M.A. which is closely related by area, period, or topic to his probable major field for the Ph.D.

At the present time the Department offers work in three areas for students in the Master's year: America (United States) since 1600, Britain since 1500, and Europe since 1700.

Nine courses are required for the degree: two in historiography (History 200A-B); two in a research seminar (taken in sequence, as a unit); three in a colloquium (taken in sequence, as a unit); and two in electives (from such courses as History 280, History 285, or History 299). The student will be expected to take his seminar and colloquium within the same general field, i.e., within American, British, or European History. In most cases he will have completed his seminar and historiography as well as two-thirds of his colloquium requirement by the end of his second quarter as a graduate student.

4. Time Limits

The Department encourages M.A. students to elect a full-time program, or three courses per quarter. Part-time students and teaching assistants may have a maximum of six academic quarters to satisfy their requirements, but they are urged to proceed as rapidly as possible.

Doctor of Philosophy in History

1. Requirements for Admission

To apply for admission to the doctoral program, the student should have completed the M.A. in History at Irvine or equivalent work at another institution. Whenever possible, however, it would be advisable for the potential doctoral student to begin his graduate work on this campus, since the doctoral student who has taken his M.A. elsewhere will be expected during his first year to enroll in a program identical to that of the incoming M.A. students. Applicants who have not previously done so must take the Graduate Record Examination in *both* the Aptitude and Advanced History sections. The results of this test, together with the student's record, letters, and *interview where possible,* will be used in deciding for or against his application for admission.

2. Language Requirements

All students, except as specified below, must demonstrate a reading knowledge of one useful foreign language no later than the end of the first year in the program. Normally, the student will count his Master's language in fulfillment of this stipulation, but his proficiency can also be established by his passing a departmental test or by achieving a score of at least 500 on the appropriate ETS examination. (Note: Scores from examinations taken more than two years prior to admission to the doctoral program will *not* be accepted as satisfying this requirement.) Students in American or British history who have opted for a language substitute in completing the UCI Master's Degree will be allowed to submit this work in fulfillment of "further 'special skill' requirements" (see paragraph 3, below) and will not be subject to the one-year time limit for achieving a foreign language competence.

3. Further "Special Skill" Requirements

These depend upon the field of emphasis which the student selects:

a. An individual with a major field in United States or British History may *either* demonstrate a reading knowledge of a second useful foreign language (by achieving an ETS score of 500 or by passing a language test designed by his advisor),*or, with his advisor's permission,* complete, as a doctoral student, a coherent sequence of courses in an area of study (e.g., communications science, computer work, statistics, linguistic analysis) that will provide tools useful in mastering his major field. These courses would be taken in addition to those described in paragraph 4, below, and should not lie within the student's major, minor, or outside fields. Any student who wishes to count courses which he has taken previous to his UCI graduate work in fulfillment of this requirement may be asked to pass a special examination on the methods in question.

b. An individual with a major field in a non-American or non-British area must demonstrate a reading knowledge of a second useful foreign language. He can do this either by achieving an ETS score of 500 or by passing a language test arranged by his advisor.

4. Program of Study

After consulting with the Coordinator of Graduate Advising, the student will be assigned a departmental advisor who will be responsible for approving his fields of study, helping him to select consulting faculty, and, after the student has passed his qualifying examinations, recommending the director of his dissertation.

The student will prepare himself for qualifying examinations in four fields: a major a related minor, a second minor — all in History — and one aspect of a discipline outside of History which is related to his major field.

a. The major and minor fields will be either defined topically or chosen from among the historical periods regularly offered (various combinations of themes and periods may be worked out). In devising topical fields (e.g., history of democratic institutions, war in the modern world, comparative industrialization, comparative reform movements), a student must obtain the consent of both his advisor and the Coordinator of Graduate Advising. In planning such a program, the student should make certain that instructors are available and that an adequate concern for historical continuity is built into the design.

b. Four historical periods are currently offered as major fields by the Department: Europe since 1815; Great Britain, 1485-1714; Great Britain since 1714; and America since 1840.

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

Course requirements for doctoral students include the following:

a. One two-quarter sequence in *Historiography* (normally taken during the first and second quarters of the first doctoral year). Students with a Master's degree from UCI are exempted from this requirement.

b. One two-quarter *seminar* in the major field (normally taken during the first and second quarters of the first doctoral year). Students with a Master's degree from UCI are exempted from this requirement.

c. Two three-quarter (i.e., year-long) *colloquium* sequences, the first of which will encompass the student's major field and the second of which will encompass one of his minor fields. Normally, the first would be taken during the first doctoral year and the second during the second doctoral year. Students with an M.A. from UCI are exempted from the first of these two sequences.

The remainder of the student's program during each quarter of his residence will consist of those colloquia, seminars, and courses in Special Topics (History 280), Special Methods (History 285), or Directed Reading (History 299) with which he chooses to prepare himself for his examinations and with which he can attain the normal academic load of three courses per quarter. (For a teaching assistant or other student who is devoting at least half-time to teaching, five courses per academic year is the normal load.) It should be noted that the University residence requirement for the Ph.D. is six quarters and that this is usually fulfilled during the first two years that a student is in the program. University regulations stipulate that a student must be registered during fall, winter, and spring quarters unless he has petitioned for and been granted a leave of absence.

5. Teaching Requirements

All doctoral students are expected to do at least some teaching under the direction of the regular faculty, either as teaching assistants or as temporary associates. All teaching assistants working in the History Core Course (29A-B-C) must enroll for the Practicum in Teaching (329A-B-C). Associateships can be arranged for by the student's advisor and will typically involve a limited experience in lecturing, discussion-group leadership, preparation of examinations, and the planning of a course. Upon the student's completion of this work, the advisor will prepare a statement of evaluation which will be entered in the student's dossier. Teaching assistants will be evaluated both by the professors and the undergraduates of the courses in which they teach, and the evaluations will be placed among their departmental records.

6. The Qualifying Examinations and Dissertation

After completing the appropriate courses and other preparatory work (normally seven to eight quarters after beginning the M.A. at Irvine or six to seven quarters after joining the Ph.D. program from the outside), the student will present himself for written examinations in his major and minor fields and, following this, for a qualifying oral examination covering his entire program (with previously determined emphases) except for the omission of his second minor. After passing the written and oral examinations, the student will be advanced to candidacy for the Ph.D. and will work upon his dissertation. The research and writing involved in this

effort can be expected to require from one to two years. There will be a final oral examination on the dissertation before it is accepted by the Department.

HISTORY FACULTY

Kendall Bailes, Ph.D. Columbia University, *Assistant Professor of History*
Kenneth P. Bailey, Ph.D. University of California, Los Angeles, *Lecturer in History and Director of Teacher Education*
John P. Diggins, Ph.D. University of Southern California, *Associate Professor of History*
Richard I. Frank, Ph.D. University of California, Berkeley, *Associate Professor of History and Classics*
Lamar Mott Hill, Ph.D. University of London, *Assistant Professor of History*
Karl G. Hufbauer, Ph.D. University of California, Berkeley, *Assistant Professor of History*
Jon S. Jacobson, Ph.D. University of California, Berkeley, *Associate Professor of History*
Michael P. Johnson, M.A. Stanford University, *Lecturer in History*
Robert H. Lucas, Ph.D. Columbia University, *Assistant Professor of History*
Arthur J. Marder, Ph.D. Harvard University, *Professor of History*
Samuel C. McCulloch, Ph.D. University of California, Los Angeles, *Professor of History*
Henry Cord Meyer, Ph.D. Yale University, *Professor of History*
Keith L. Nelson, Ph.D. University of California, Berkeley, *Assistant Professor of History*
Spencer C. Olin, Jr., Ph.D. Claremont Graduate School, *Associate Professor of History*
Mark S. Poster, Ph.D. New York University, *Assistant Professor of History*
J. Alan Rogers, Ph.D. University of California, Santa Barbara, *Assistant Professor of History*
Gerald T. White, Ph.D. University of California, Berkeley, *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, industrial society

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.

109 Western Traditions in Art and Society (1)
Interweaving of the films and ideas of Lord Kenneth Clark's series, *Civilization,* with the major traditions of Western Society, especially: the role of the individual; the search for a just society; development of knowledge in the service of man.

110A-B Hellenic and Hellenistic Greece (1-1)
Homeric backgrounds and the rise of the Polis. Athenian and Spartan cultures. The post-Alexandrian empires of the Near East. Hellenistic civilization.

112A-B The Roman Empire (1-1)
The Empire as unifier of the Mediterranean World, its strengths and weaknesses as a social and political system, the significance of Christianity, and the conquest of classical civilization by the Church and the barbarians.

115 Early Medieval Europe, 300-1000 (1)
The rise of Christian culture and impact of barbarian invasions. The empires of Constantine, Justinian, and Charlemagne, interaction of Byzantine East and Latin West.

116 The High Middle Ages, 1000-1300 (1)
Norse invasions of Europe. Rise of towns and universities. Conflicts of church and state. Revival of science and philosophy. Courtly love. Emergence of nation-states.

118 Aspects of Medieval Britain (1)
Covers the British Isles from their pre-history to 1485. The rise of monarchial institutions during Saxon, Norman, and Angevin rule will provide a central background for a study of the culture and intellectual history of the period.

119 Problems in Medieval History (1)
Tutorial approach to topics reflecting students' individual interests. Emphasis on the improvement of research techniques through a substantial term paper. Prerequisite: History 115 and/or History 116 or the equivalent.

125 The Renaissance (1)
A study, against respective political and historical backgrounds, of the cultural and intellectual activity of renaissance Italy, France, and Germany and the Low Countries, with emphasis 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. Also a view of the period as a bridge between humanism and rationalism.

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 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 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 Freud and Social Thought (1)
Exploration of the psychoanalytical concept of the emotional structures of the family, using texts primarily from Freud, but also from later psychological theorists. It will show the changing social thought of the new psychologies of the 20th century as part of the discipline of intellectual history.

135A-B European International Relations, 1848-Present (1-1)
The cultural, economic, and political relations of European states from the eve of the revolutions of 1848 to the eve of the Second World War.

136A-B-C The History of Russia (1-1-1)
The course emphasizes social and political developments. First quarter: 9th century to Decembrist Revolution of 1825; Second quarter: transformation from feudal-agricultural to agricultural-industrial state, ending with the Revolution of 1917; Third quarter: Soviet period.

137 The History of Modern Central-East Europe (1)
This course deals with the history of Austria, Hungary, Czechoslovakia, and Poland from 1918 to the present. It emphasizes, especially, social and political factors.

138 Aspects of German-Slavic Relations Since 1815 (1)
Social, intellectual, and political interrelationships between Germans and Slavs. Influences, cooperation, and confrontation from the age of Romanticism to the era of Fascism.

139A-B German History (1-1)
A historical analysis of German politics, diplomacy, and culture from Bismarck to Brandt.

140A-B-C British Traditions and Institutions (1-1-1)
The men and events, literary and artistic works, ideals and institutions which best reveal or most deeply influenced British life.

143 Humanism and Early Tudor Politics (1)
An examination of the two major humanistic influences in England, civic and spiritual, and their impact on the issues of reformation, diplomacy, political favor, and literature in England from 1485 until the death of Edward VI in 1553.

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.

145 Topics in Early Modern English Economic and Social History (1)
Topics relating to the process of England's evolution from a traditional agrarian society to an early modern nation state. May be repeated.

146A-B Constitutional and Legal History of England (1-1)
English national governmental systems with emphasis on parliamentary processes, philosophy of Anglo-Saxon law, and administrative institutions.

149A-B The British Commonwealth and Empire (1-1)
Emphasis upon social, intellectual, and cultural development. The impact of English history upon the evolution of self-governing units. Significance of the Empire in the contemporary world.

150 The Mexican (1)
A social and cultural history of the Mexican from pre-Columbian civilizations through the Revolution of 1910 to questions of cultural identity and discrimination north and south of the Rio Grande today.

151 The United States and Latin America (1)
A history of economic, military, and diplomatic interactions between the United States and Latin America from the 18th to the 20th centuries with emphasis on conflicts related to different stages of modernization.

152 Revolutionary Latin America (1)
An examination of the social and economic structure of Latin America in the 20th century with emphasis on the question of how Latin America can deal effectively with its monumental problems of inequality, exploitation, and conflict.

166A Colonial America (1)
The growth and development of America from the founding of the colonies through the Revolution, stressing the formation of distinctive American institutions, social and economic patterns, and intellectual attitudes.

166B Revolutionary America, 1763-1800 (1)
An analysis of the founding of a new nation: the causes of the breakup of the first British Empire, the Revolutionary struggle, the formation of new government, and the rise of political parties.

169A-B The United States in Transition, 1860-1901 (1-1)
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 Communist Party, "group" drama and the proletarian novel, mass media.

174A-B-C American Intellectual History (1-1-1)
A study of the major ideas, belief-systems, and values in American intellectual history. 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)
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)
An examination of certain domestic implications of the Cold War, to include the rise of the military-industrial complex, the space race, the American economy, threats to traditional democratic procedures, and the problems of the American university.

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.

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.

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 implications of nuclear technology since 1945.

190A-B Senior Project (1-1)
An initial quarter of individual background study in primary and secondary sources, followed by group interaction in the context of a senior seminar.

194 Studies in History (1)
Courses on various subjects taught infrequently.

195 Special Studies in History for Secondary School Teachers (1)
Courses offered in conjunction with the Office of Teacher Education to serve particularly the needs of secondary school teachers in the field of History.

197 Special Projects (1)
Individual project directed towards a specific era or topic, with paper and/or examination as instructor may require. Consultation with instructor necessary prior to registration. May be repeated.

198 Experimental Group Study (1)
Open to three or more students who choose a particular topic or theme and arrange with a professor of their choice (prior to registration) for academic consultation (one to two hours weekly) and evaluation. May be repeated.

199 Independent Reading (1)
Individual program with regular consultations and/or examination as instructor may require. Consent of instructor necessary prior to registration. May be repeated.

GRADUATE COURSES IN HISTORY

In addition to the following courses, graduate students in History might find these Humanities courses of special interest: Humanities 210 (Topics and Methods in Linguistics), Humanities 220 (Literary Theory), and Humanities 230 (Philosophical Analysis).

Historiography

History 200A-B Historical Theory and Analysis (1-1)
An introduction to various approaches to historical inquiry. 200A deals with speculative and critical history, as well as analytical history. 200A same as Humanities 200. 200B studies the perspectives of psychology, anthropology, and sociology relevant to history.

Colloquia

230A-B-C The Literature and Interpretations of European History (1-1-1)
First quarter: 19th century; Second quarter: 20th century; Third quarter: intellectual history.

240A-B-C The Literature and Interpretations of British History (1-1-1)
First quarter: 16th and 17th centuries; Second quarter: 18th century and Empire; Third quarter: 20th century.

270A-B-C The Literature and Interpretations of American History (1-1-1)
First quarter: 17th and 18th centuries; Second quarter: 19th century; Third quarter: 20th century.

Seminars

235A-B European History (1-1)

245A-B British History (1-1)

275A-B American History (1-1)

Special Studies

280 Special Topics (1)
May be repeated. Lectures, readings, and discussions on subjects more limited in scope than those included in the year-long colloquia.

285 Special Methods (1)
May be repeated. A course designed to develop particular research skills.

298 Directed Research (1)
By consent. May be repeated.

299 Directed Reading (1)
By consent. May be repeated.

329A-B-C Practicum in Teaching (1-1-1)
A course to run concurrently with History 29A-B-C to help teaching assistants design their satellite seminars. Discussion of intellectual issues and pedagogical problems. Seminars, individual meetings, evaluation of teaching.

LANGUAGE LABORATORY

The Language Laboratory offers courses in a number of modern languages on a self-instructional basis. These courses are typically numbered K1A, K1B, and K1C, offered in three one-quarter sequences. The bulk of the work is done in the Language Laboratory with prerecorded dialogues, grammar drills, and cultural units, accompanied by student textbooks and workbooks. Each student is expected to attend the Language Laboratory a minimum of one hour daily. The students, working at their own pace, are then examined on a regular weekly basis in one or more live contact hours with UCI faculty proficient in the given language. Even though these are basically self-instructional courses, students can receive full credit and will be given recorded grades by the testing teams on the termination of each quarter's work.

The courses offered by the Language Laboratory are:

ESL (English as a Second Language) K1A, K1B, K1C; Portuguese K1A, K1B, K1C; Spanish K1A, K1B, K1C.

These are typically run in the normal sequence of fall, winter, and spring. However, students are allowed to pace themselves either more rapidly or more slowly as their time and talents permit.

PROGRAM IN LINGUISTICS

Linguistics is a field of study with potential relationships with several disciplines concerned with language. Because of these various possibilities in emphasis and because linguistic studies are on the edge of territory as yet unexplored and therefore without precedent, the linguistic group in the School of Humanities has formulated programs which are highly flexible.

Students are encouraged to enroll in linguistic courses with varying perspectives and counsel with faculty across schools and departments. The student obtaining a B.A. in linguistics is expected to have some awareness of linguistic work beyond his own specialization.

The requirements of the program are designed to provide guidelines sufficient to give direction; each student's program will be an individual development between the student and his discipline. Although the program is suggested for those students who are primarily interested in the emphasis of language in their linguistic studies, if a student has an innovative idea for a course of study that would not follow this general plan, he may propose his plan to his advisors and petition for a change in the requirements. It is assumed that this would occur after finishing the core courses (Linguistics 50, 101, 102, 103).

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

Program Requirements

1. Linguistics 50, 101, 102, 103;
2. Four additional upper-division courses in linguistics such as: Psycholinguistics; Socio-linguistics; Anthropological linguistics; Mathematical linguistics; Philosophy of Language; Field Methods; Formal Grammars; Semantics; Linguistics and Poetics; History of the English, French, German, Russian, or Spanish language; and others as offered from time to time which are linguistically oriented. Note that these are offered across school lines.
3. Three courses beyond 2C in a single foreign language;
4. One of the following:
   (a) three courses in a non-Indo-European language, or
   (b) three courses of Latin or Greek.

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.

FACULTY OF THE PROGRAM IN LINGUISTICS

Richard Barrutia, Ph.D. University of Texas, *Associate Professor of Spanish*
Peter Colaclides, Ph.D. University of Athens, *Professor of Classics*
Henri Diament, Ph.D. Columbia University, *Assistant Professor of French*
Jared Gordon, Ph.D. University of California, Los Angeles, *Assistant Professor of Russian and Chairman of the Linguistics Committee*
Mary Ritchie Key, Ph.D. University of Texas, *Associate Professor of Linguistics*
Alan Shaterian, Ph.D. University of California, Berkeley, *Assistant Professor of German*
Tracy D. Terrell, Ph.D. University of Texas, *Lecturer in Spanish*
William D. Truesdell, Ph.D. Brown University, *Assistant Professor of Spanish*
Douglas Walker, Ph.D. University of California, San Diego, *Assistant Professor of French*

COURSES IN LINGUISTICS

50 Introduction to Linguistics (1)
Beginning course surveying the scope of linguistics. Linguistic analysis and language structures illustrated by languages from many areas of the world.

101 Linguistic Analysis I: Articulatory Phonetics (1)
Practice in the perception, production, and transcription of phonetic phenomena in various languages of the world. Prerequisite: Linguistics 50.

102 Linguistic Analysis II: Grammar (1)
Methods of analysis on utterances larger than the word. These include phrase types and clause types, as well as sentences, paragraph structures, and discourse. 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 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.

151 Phonological Analysis
Phonological systems. Problems in the analysis of phonetic data from a wide variety of

languages and the formalization of the description of phonological systems within the generative transformational theoretical framework. Prerequisite: Linguistics 101.

190 Directed Reading

199 Individual Study

200 Studies in Linguistics
Topic varies depending upon availability and interest of staff.

250A-B Romance Linguistics
Historical development of modern Romance languages from Vulgar Latin. Taught in English. Prerequisites: Fundamentals of Latin; knowledge of French, Spanish, or Italian.

ADDITIONAL LINGUISTICS COURSES

Classics

Full undergraduate offerings in Greek and Latin.

Classics 187 Selected Topics in Greek and Latin Linguistics

Classics 200 Selected Topics in Greek and Latin Linguistics

English

English 181 The Structure of English (1)

English 184 History of the English Language (1)

English 187 Selected Topics in English Linguistics (1)

English 200 Selected Topics in English Linguistics (1)

French

French 131 Senior Seminar in Linguistics

French 187 Selected Topics in French Linguistics

French 200 Selected Topics in French Linguistics (1)

French 201 History of the French Language (1)

French 202 Contrastive French Phonology (1)

French 203 Contrastive French Morphology and Syntax (1)

French 208 Stylistics (1)

German

German 180 Structure and History of the German Language

German 187 Selected Topics in Germanic Linguistics

German 200 Selected Topics in Germanic Linguistics (1)

German 201 History of the German Language (1)

German 202 Contrastive German Phonology (1)

German 203 Contrastive German Morphology and Syntax (1)

German 204 Survey of Germanic Languages (1)

German 205 Introduction to Middle High German (1)

Humanities

Humanities 200 Topics and Methods in Linguistics

Humanities 291 Linguistics and Poetics

Philosophy

Philosophy 135 Philosophy of Language (1)

Russian

Russian 180 Structure and History of the Russian Language

Russian 187 Selected Topics in Russian Linguistics

Russian 200 Selected Topics in Russian Linguistics

Spanish

Spanish 187 Selected Topics in Spanish Linguistics

Spanish 200 Selected Topics in Spanish Linguistics (1)

Spanish 201 History of the Spanish Language

Spanish 202 Contrastive Spanish Phonology

Spanish 203 Contrastive Spanish Morphology and Syntax

Spanish 250A-B Romance Linguistics (1-1)

DEPARTMENT OF PHILOSOPHY

Philosophy addresses itself to questions that arise insistently in every area of human experience and in every discipline within the University. Each discipline inevitably poses problems concerning the nature of the standards appropriate to it and the place of its subject matter within the total framework of human knowledge. If we are to understand science or art or literature, or such human practices as morality and religion, we are bound to address ourselves to philosophical issues relating to their nature, the uses of reason appropriate to them, and the contributions they make to our understanding and appreciation of ourselves and the world in which we live.

UNDERGRADUATE PROGRAM

Instruction in philosophy relies essentially upon discussion in which students are active participants. Wherever possible, therefore, classes are severely limited in size in order to permit sustained dialogues between student and instructor.

Some of the courses offered are of general interest to all students. Others are designed to explore issues that arise in selected and special disciplines. Among these are courses in the philosophy of science and of art. The staff should be consulted for advice about courses best suited to the specialized needs of particular students.

The program of course offerings is also designed for those majors in philosophy whose intention may be either to enter some professional school upon graduation (e.g., law) or to engage in graduate work in philosophy.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

Departmental Requirements

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

GRADUATE PROGRAMS

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: write a thesis on a subject to be chosen on consultation with his advisor and defend his thesis in an oral examination, *or* 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 Division 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:

Tools of research, to be satisfied by demonstrating proficiency in a single appropriate foreign language* *or* by passing with a grade of B or better five to six courses at the graduate level in a discipline or disciplines outside of the Philosophy Department. Approval for the latter alternative will be granted by the Department only if, in its judgment, the courses form an integrated unit in light of the student's research interest.

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.)

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*The foreign language examinations are administered by the Department of Philosophy. They are two hours in length and consist of 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 500 of the Humanities Office Building (833-6526).

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.

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.

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.

The defense of the thesis. At a suitable point during the development of the thesis, the Doctoral Committee administers an oral examination, the focus of which is the content of the thesis itself. If at all possible, this examination will be given while the student is still in residence.

PHILOSOPHY FACULTY

Nelson C. Pike, Ph.D. Harvard University, *Professor of Philosophy and Chairman of the Department*
Nuel Belnap, *Visiting Professor of Philosophy* (winter quarter)
Gordon G. Brittan, Ph.D. Stanford University, *Associate Professor of Philosophy*
Barbara Buroker, *Acting Assistant Professor of Philosophy*
Richard Holzman, *Acting 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*
Gerasimos Santas, Ph.D. Cornell University, *Professor of Philosophy*

**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.

Erica Sherover, *Lecturer in Philosophy*
Guy J. Sircello, Ph.D. Columbia University, *Associate Professor of Philosophy*
Peter Woodruff, Ph.D. University of Pittsburgh, *Assistant Professor of Philosophy*

UNDERGRADUATE COURSES IN PHILOSOPHY

What follows is the list of undergraduate and graduate courses frequently offered by the Department. For information concerning specific offerings for individual quarters, consult the Schedule of Courses. A complete list of courses to be offered during the 1972-73 academic year will be available in the Philosophy Department office after July 1.

5 Problems of Philosophy (1)
This course varies in content and structure from quarter to quarter. A central aim is to introduce students to certain basic philosophical problems and concepts, methods, and techniques, with an emphasis on both discussion and writing.

15 Introduction to Ethics (1)
Studies of selected writings from the history of ethics. Problems dealt with include the nature of the good life and the moral justification of conduct.

50 Elements of Logic (1)
A systematic discussion of the rules governing valid inference.

Unless otherwise specified, one course in philosophy is required as a prerequisite for each of the following courses. In special cases the requirement may be waived. Inquiries should be directed to the staff.

100A-B Metaphysics (1-1)
A study of the nature of reality and existence, dealing with such problems as substance, free will, abstract objects, identity; 100A prerequisite for 100B. No credit given for 100A without completion of 100B.

110A-B Theory of Knowledge (1-1)
An examination of the central problems of theory of knowledge: the role of perception in the acquisition of knowledge, the nature of evidence and the distinction between knowledge and belief, and the nature of truth and certainty; 110A is prerequisite for 110B. No credit given for 110A without completion of 110B.

115A-B Ethics (1-1)
Selected topics from recent moral philosophy, such as the naturalistic fallacy, the distinction between "is" and "ought," rule and act utilitarianism; 115A is prerequisite for 115B. No credit given for 115A without completion of 115B.

117 Political Philosophy (1)
An examination of some of the central problems in Political Philosophy. Some of the problems treated will be: the justification and limits of legitimate authority; the notion of an ideal state; and the meaning of political liberty and obligation.

120A History of Ancient Philosophy (1)
An examination of the central philosophical themes about man, society, and nature in the Pre-Socratics, Socrates, Plato, Aristotle, the Stoics, the Epicureans, and the Skeptics. Prerequisite: One course in philosophy or consent of instructor.

120B History of Medieval Philosophy (1)
The purpose of this course is to introduce the student to the more important thinkers of the Middle Ages (approximately 400-1400 A.D.) and their respective philosophical systems. Prerequisite: Philosophy 120A.

120C History of Modern Philosophy (1)
A study of some major developments in Western Philosophy from Descartes to Kant. Attention is focused on Kant's theory of time and space and on Berkeley's phenomenalism. Readings from Descartes, Leibniz, Locke, Berkeley, Hume, and Kant. Prerequisite: Philosophy 120B.

121 Plato (1)
A discussion of the central subjects in Plato's Dialogues, including Socratic questions, Socratic ethics, Platonic ethics and social philosophy, Plato's theory of ideas, and his views on knowledge and perception, language and art. Lectures and student participation. Prerequisite: Philosophy 120A or consent of instructor.

122 Aristotle (1)
The basics of Aristotle's philosophy: his philosophy of language, logic, epistemology, philosophy of nature, metaphysics, ethics, and philosophy of art.

125 Medieval Philosophy (1)
This course is intended to familiarize the student with more specific areas of medieval philosophy. To this end, a particular problem, such as that of universals, will be studied in some depth. Prerequisite: Philosophy 120B or consent of instructor.

126 Continental Rationalism (1)
A detailed review of representative works of the more outstanding continental rationalists: Descartes, Malebranche, Leibniz, and Spinoza. Prerequisite: Philosophy 120C or consent of instructor.

127A-B British Empiricism (1-1)
An examination of the writings of Locke, Berkeley, and Hume with special attention to the problems of substance, perception, and knowledge. Prerequisite: Philosophy 120C or consent of instructor.

128 Kant (1)
Typically a fairly close reading of the first half of the *Critique of Pure Reason.* Prerequisite: Philosophy 120C or consent of instructor.

129 Hegel (1)
An intensive and analytical study of selected portions of *The Phenomenology of Mind.* Prerequisite: 120C.

130 Philosophy of Mind (1)
An examination of such psychological concepts as motive, intention, desire, memory, intelligence, belief. Prerequisite: Philosophy 50 or consent of instructor.

135 Philosophy of Language (1)
A critical exploration of selected theories of meaning such as Reference, Denotation-Connotation, Stimulus-Response, and Speech Act. Prerequisite: Philosophy 50 or consent of instructor.

140 Philosophy of History (1)
The analysis of issues such as the relativity of historical knowledge, the place of moral judgments in historical writing, the nature of historical explanation, and the "meaning" of history. Prerequisite: Philosophy 50 or consent of the instructor.

145 Social and Political Philosophy (1)
A philosophical probe of the concept of Civil Disobedience. Attention is focused on the defining features of civilly disobedient behavior with some discussion of the contract theory of the state, the concept of natural law and the Nuremberg Principles. Readings from the works of Plato, Sophocles, Henry Thoreau, Martin Luther King, M.K. Gandhi, Bertrand Russell, and a number of legal commentators such as Harrison Tweed, Charles Black, and Abraham Fortus.

146 American Philosophy (1)
This course examines the work of a major American philosopher such as Peirce, James, Dewey, Lewis, Sellars, or Quine.

150 Symbolic Logic (1)
An intensive introduction to methods of proof in formal logic, covering the standard propositional and quantificational calculi, the theory of identity, and theory of descriptions.

151 Mathematical Logic I (1)
A study of the proof theory and model theory for propositional logic. Prerequisite: Philosophy 150.

152 Mathematical Logic II (1)
A study of the proof theory and model theory for the logic of quantifiers with identity. Prerequisite: Philosophy 151.

153 Topics in Mathematical Logic (1)
A selected topic in advanced mathematical logic will be discussed. Typical examples are proof theory, model theory, recursive functions, set theory, combinatory logic. Prerequisite: Philosophy 152 or consent of instructor.

155 Philosophy of Logic (1)
An examination of fundamental questions raised by contemporary formal logic. Topics include the existence and nature of propositions, theory of entailment, descriptions and existential presuppositions. Prerequisite: Consent of instructor.

160 Introduction to Philosophy of Science (1)
Systematic examination of leading problems in the philosophy of science, for example, the nature of mathematics, explanation, confirmation, and the limits of scientific explanation.

165 Philosophy of Religion (1)
A philosophical inquiry into the nature and existence of God. Attention is focused on the literature of Western mysticism and Judeo-Christian theology. Topics include the phenomenology of religious experience, the attributes of God, and the traditional arguments for and against the existence of a Divine Being. Readings include the works of Rudolf Otto, St. Anselm, St. Thomas, David Hume, William Paley.

166 Topics in Philosophical Theology (1)
An intensive examination of one or more traditional problems in the Philosophy of Religion, such as the problem of evil, the argument from design, the concept of omnipotence, etc. Prerequisite: Philosophy 165 (this course may be taken for credit more than once).

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.

180 Contemporary Analytic Philosophy (1)
A selected topic (such as the theory of perception) will be discussed from the analytic point of view, with consideration of the views of contemporary philosophers on the subject. May be repeated for credit.

189 Philosophy of Sartre (1)

190 Topics in Current Research (1)

198 Senior Proseminar (1)

199 Directed Special Studies (1)

GRADUATE COURSES IN PHILOSOPHY

Since seminar and graduate course topics vary with the occasions on which they are offered, they may be repeated for credit. Open to graduate students and upper-division undergraduates by consent of instructor.

In addition to the following courses, graduate students in Philosophy might find these Humanities courses of special interest: Humanities 200 (History of Theory

and Analysis), Humanities 210 (Topics and Methods in Linguistics), and Humanities 220 (Literary Theory).

200 Seminar in Metaphysics (1)
Prerequisite: Consent of instructor.

210 Seminar in Theory of Knowledge (1)
Prerequisite: Consent of instructor.

215 Seminar in Ethics (1)
Prerequisite: Consent of instructor.

217 Seminar in Political Philosophy (1)
Prerequisite: Consent of instructor.

220 Seminar in History of Philosophy (1)
Prerequisite: Consent of instructor.

221 Seminar in Philosophy of Plato (1)
Prerequisite: Consent of instructor.

222 Seminar in Philosophy of Aristotle (1)
Prerequisite: Consent of instructor.

228 Seminar in Philosophy of Kant (1)
Prerequisite: Consent of instructor.

230 Seminar in Philosophy of Mind (1)
Prerequisite: Consent of instructor.

235 Seminar in Philosophy of Language (1)
Prerequisite: Consent of instructor.

250 Seminar in Logic (1)
Prerequisite: Consent of instructor.

252 Seminar in Set Theory (1)
Prerequisite: Consent of instructor.

255 Seminar in Philosophy of Logic (1)
Prerequisite: Consent of instructor.

260 Seminar in Philosophy of Science (1)
Prerequisite: Consent of instructor.

265 Seminar in Philosophy of Religion (1)
Prerequisite: Consent of instructor.

270 Seminar Topics in Aesthetics (1)
Prerequisite: Consent of instructor.

280 Seminar in Contemporary Philosophy (1)
Prerequisite: Consent of instructor.

299 Directed Research (1)
Prerequisite: Consent of instructor.

399 University Teacher Training (1)
Prerequisite: Consent of instructor.

PROGRAM IN RUSSIAN

RUSSIAN UNDERGRADUATE PROGRAM

Russian is a language spoken by 220 million people in the Soviet Union and ranks with English and Chinese as one of the three major world languages. Russian is a

language of the Indo-European family and is thus related to English, French, and German. Russian is difficult, but not in the way so many potential students envisage. It is an infinitely rich language, as is English, and adapts itself well to a variety of styles and genres from lyric love poetry to the seeming harshness and brashness of the futurists.

For the first two years the Program in Russian emphasizes a reading knowledge of literary Russian. In the latter part of the second year, and thereafter, the speaking and writing skills are emphasized. At the end of his senior year, the student can expect to have attained a rather high level of proficiency in all language skills – reading, writing, speaking, and understanding. By then he will have read a number of selected literary texts – including a fair portion of the significant masterworks – in the original. He will also have familiarized himself with some of the historical background of the language and with its relation to other Slavic and European languages. And he will have achieved a reasonable degree of familiarity with the major cultural and social trends in Russian history.

In addition to the regular Russian major with emphasis on language and literature, the Program in Russian offers a modified major with emphasis on linguistics.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

Departmental Requirements

The Russian major consists of the following 12 courses: Russian 10A-B; 11; 101A-B; 101C; 151A-B-C; 160A-B; 170. In addition, it is strongly recommended that the student take or audit Linguistics 50, and Russian 150A-B-C, 180, 181, and 20A-B.

The Russian major with emphasis on linguistics consists of the following 12 courses: 10A-B; 11; 101A-B-C; two courses from 151A-B-C and 160A-B; Linguistics 101, 102, 103, 151.

RUSSIAN FACULTY

Guy de Mallac-Sauzier, Ph.D. Cornell University, *Associate Professor of Russian and Director, Program in Russian*

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

Michael A. Green, M.A. University of California, Los Angeles, *Acting Assistant Professor of Russian*

Rainer Vadim Grenewitz, Ph.D. Cornell University, *Assistant Professor of Russian*

LOWER-DIVISION COURSES IN RUSSIAN

1A-B-C Fundamentals of the Russian Language
The course focuses on reading ability. In the third quarter the student will be reading contemporary Soviet prose (such as literary texts and newspapers) with the aid of a dictionary.

2A-B-C Second-year Language Study
The student can expect to read contemporary Russian literary and political documents. The

emphasis will be on reading ability, but the student can expect a greater stress on oral skills than in the first year.

10A-B Third-year Language Study
A continuation of the second-year program, with added emphasis on oral skills.

11 Phonetics and Review Grammar
A linguistic introduction to the sounds and intonation of Russian. The grammar will concentrate only on some of the more difficult points. Linguistics 50 is a strongly recommended precursor to this course.

20A-B Russian Civilization
A two-quarter sequence devoted to the definition of Russian culture from the medieval to the modern period, with attention to historical, literary, political, and philosophical interpretations.

UPPER-DIVISION COURSES IN RUSSIAN

101A-B Fourth-year Language Study
Original literature is read, and conversation and composition are in Russian.

101C The History and Development of the Russian Literary Language
A brief philological introduction. Nineteenth- and twentieth-century prose works will be read and analyzed from the stylistic viewpoint.

150A-B-C Russian Literature in Translation
The first quarter of this sequence is devoted to nineteenth-century, and the second to twentieth-century prose works. The topic varies in the 150C course.

151A Russian Prose 1800-1865 (in Russian)
The first course in a three-quarter sequence covering representative examples of Russian fiction. Class discussion conducted largely in Russian.

151B Russian Prose 1865-1910 (in Russian)

151C Russian and Soviet Prose 1910-present (in Russian)

155 Russian Stage and Film Drama (in translation) (1)
This course is interdisciplinary in approach and focuses upon selected masterpieces considered through different media.

158 Introduction to Slavic Literatures (in translation)
A comparative discussion of representative texts of Slavic (notably Czech and Polish) literatures, with reference to relevant texts in Russian literature. The focus is on selected major works.

160A Russian Poetry of the Golden Age (in Russian)
A discussion of some of the poetry written before Pushkin, as well as of texts by major 19th-century poets.

160B Russian Poetry 1880-present (in Russian)

170 Russian Literary Criticism
Open to qualified students. Russian majors are expected to do a significant portion of the reading in the original.

180 Tolstoy in Translation
The major novels and selected short stories, essays, and autobiographical writings will be discussed.

181 Dostoevsky in Translation
Topic varies; may be repeated for credit. Offered twice in 1972-73. Topics: Dostoevsky's early works; a critical and thematic discussion of Dostoevsky in relation to Kafka.

199 Special Studies in Russian
By consent. May be repeated.

200 Selected Topics in Russian Linguistics

DEPARTMENT OF SPANISH AND PORTUGUESE

The main objectives of the program in Spanish and Portuguese are: to develop competence in the ability to understand, speak, read, and write Spanish and Portuguese; to provide through the knowledge of these two languages an understanding and appreciation of their literature and culture.

Students are 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.

All courses in Spanish and Portuguese, unless specifically stated, are taught in the foreign language. First-year courses meet in the classroom four times a week and in the language laboratory twice a week. By the end of the first year, students attain mastery of the basic structure of the language and ability to converse on everyday topics as well as to read and write on an elementary plane. Self-instructional courses in both Spanish and Portuguese are also available.

In the second year, emphasis is put on gradually raising the level of the student's ability to read and write. A third-year course of two quarters stresses composition as opposed to translation. Further, a course in phonetics perfects pronunciation, introduces theoretical considerations, and presents historical and dialectal variants. The introductory courses in literature, also in the third year, emphasize the analysis and appreciation of complete literary works by genre rather than the study of many short selections of innumerable authors in an anthology. The courses in Hispanic civilization combine a panoramic over-view with a close look at a specific country or topic.

Although no major in Portuguese is offered, advanced literature courses are available.

Students are encouraged to participate in programs of study abroad during the summer and the junior year.

Elected representatives of the undergraduate majors, the graduate students, and the teaching assistants participate with full voting rights in Department meetings.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: See page 125.

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:

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

Culture: Two courses in Latin-American Literature; Spanish 110A-B-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.

Ph.D. in Spanish

The Department of Spanish and Portuguese offers a Ph.D. degree with a major in either Spanish or Spanish-American Literature. The program attempts to integrate period and genre studies with work in literary theory, linguistics, and sociohistorical studies. A number of courses outside of the department are required. We thereby hope to aid in the formation of a Ph.D. candidate who is not a narrow specialist, but a scholar acquainted with the various fields that relate to his discipline. We are concerned also with the practical aspects of helping our graduates to become good teachers.

The minor field can be Spanish literature, Spanish-American literature, or Spanish linguistics.

Language Requirements

A reading knowledge of Portuguese and two other languages relevant to the student's area of specialization and subject to the approval of the Department; the fundamentals of Latin (the equivalent of UCI courses 1A-B) are a prerequisite for the courses in diachronic linguistics.

Course Requirements

A minimum of 24 courses for the Ph.D. as follows:

Two graduate courses in linguistics, diachronic and synchronic (the students who select linguistics as a minor will substitute two courses in either Spanish or Spanish-American Literature); a course in *Theory of Language*; a course in *Literary Theory* (genre studies, etc.); a course in *Methods of Literary Criticism*; a course on the sociohistorical context of the period of the student's specialization; a course in Brazilian or Portuguese Literature (preferably related to the student's specialization); three courses outside of the department in non-Iberic literatures (preferably related to the student's major with regard to period and genre), or, if the minor is Spanish linguistics, three courses in general linguistics and/or non-Iberic literatures; fourteen courses in Hispanic literature, with a minimum of four in the minor area, the rest chosen by the student in accord with his major. (Students with a minor in linguistics will take twelve courses in Hispanic literature, with a minimum of two in the field [Spanish or Spanish-American] not chosen as a major. Each Ph.D. candidate should take one course in each genre within his area.)

Candidates who have the M.A. degree from another University will be interviewed by two professors representing peninsular and Spanish-American literature, in order to evaluate their past studies in terms of our doctoral program; it is recommended that the student's graduate advisor should be the person likely to direct his doctoral dissertation, and that the choice of dissertation and director be made as early as possible; each Ph.D. candidate will act as an assistant to a professor in an upper-division course in his area of specialization, attending the class regularly and participating in the teaching (it will count as one of the required graduate courses).

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.

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:

The examination will consist of *four* parts according to the area of specialization. (Spanish Literature or Spanish-American Literature).

Spanish Literature: Major: an historical literary period, including all of the genres and the socio-historical context; a genre in all the periods, and the student will demonstrate knowledge of literary theory and methods of literary criticism; the other genres and chronological periods.

Minor area: Spanish-American Literature (all genres of the period which corresponds to the major period) or Spanish Linguistics.

Spanish-American Literature: Major: a literary genre in all the periods, and the student will demonstrate a knowledge of literary theory and methods of literary criticism; an historical literary period, including all of the genres and the sociohistorical context; the *rest* of the genres and periods.

Minor area: a period of Spanish Literature (all genres) or Spanish Linguistics.

NOTE: the student whose major area is medieval literature will choose as his minor area a period of Spanish-American Literature or Linguistics.

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*
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, Ph.D. Indiana University, *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*
Zidia Stewart, M.A. Michigan State University, *Lecturer in Spanish and Portuguese*
Tracy Terrell, Ph.D. University of Texas, *Assistant Professor of Spanish*
William Truesdell, Ph.D. Brown University, *Assistant Professor of Spanish*
Juan Villegas, Ph.D. Universidad de Chile, *Professor of Spanish*

COURSES IN PORTUGUESE

K1A-B-C Fundamentals of Portuguese (1-1-1)
A self-instructional course for highly motivated students who have already studied two years of another language at the college level. Students work at their own speed in the language laboratory and are tested twice each quarter.

140A-B-C Brazilian Prose Fiction (1-1-1)
Prerequisite: Portuguese K1C or equivalent.

141 Brazilian Civilization (1)
Prerequisite: Portuguese K1C or equivalent.

142 Brazilian Short Story (1)
Prerequisite: Portuguese K1C or equivalent.

143 Brazilian Poetry (1)
Prerequisite: Portuguese K1C or equivalent.

144 Masterpieces of Portuguese Literature (1)
Prerequisite: Portuguese 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 for highly motivated students who have already studied two years of another foreign language at the college level. Students work at their own speed in the language laboratory and are tested twice each quarter.

2A-B-C Spanish Reading and Composition (1-1-1)
Prerequisites: Normally three years of high school Spanish or one year college Spanish.

10A-B Advanced Composition (1-1)
Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of selected grammatical topics. Prerequisite: Completion of Spanish 2C or equivalent.

11 Spanish Phonetics (1)
Prerequisite: Spanish 2C or equivalent.

12A-B-C Introduction to Spanish Poetry, Theatre, Prose Fiction (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)

150 Spanish-American Literature in Translation (1)

190 Reading and Conference (1)
May be repeated.

198 Directed Group Study (1)
May be repeated.

GRADUATE COURSES IN SPANISH

In addition to the following courses, graduate students might find these Humanities courses of special interest: Humanities 200 (Historical Theory and Analysis), Humanities 210 (Topics and Methods in Linguistics), Humanities 220 (Literary Theory), and Humanities 230 (Philosophical Analysis).

200 Selected Topics in Spanish Linguistics (1)

201 History of the Spanish Language (1)
Prerequisite: Fundamentals of Latin.

204 Transformational Grammar (1)

205 Spanish Dialectology (1)

210A-B-C Medieval Literature (1-1-1)

215A-B-C Golden Age Prose Fiction (1-1-1)

216A-B Golden Age Lyric Poetry (1-1)

217A-B Golden Age Theatre (1-1)

219A-B-C Nineteenth-Century Spanish Literature (1-1-1)

220A-B Modern Spanish Novel (1-1)

221A-B Modern Spanish Poetry (1-1)

222A-B Modern Spanish Theatre (1-1)

233A-B-C Twentieth-Century Spanish-American Prose Fiction (1-1-1)

234A-B-C Spanish-American Poetry (1-1-1)

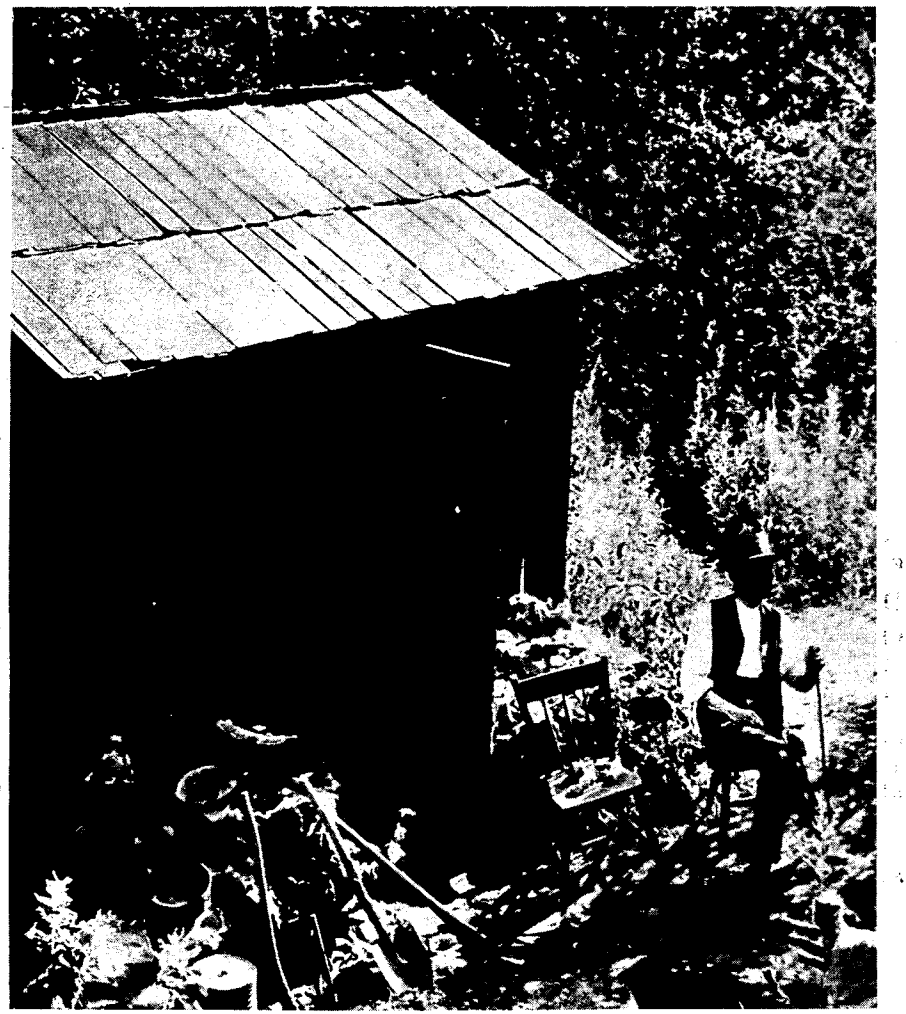
235A-B Latin-American Essay (1-1)

250A-B Romance Linguistics (1-1)
Prerequisites: Fundamentals of Latin; knowledge of French, Spanish, or Italian.

260A-B (1-1)
Title variable.

290 Reading and Conference (1)
May be repeated.

299 Dissertation Research (1)



Walter Morrow at the Alma Silver Mine in Santiago Canyon, 1890.

SCHOOL OF PHYSICAL SCIENCES

Frederick Reines
Dean

The School of Physical Sciences offers both preprofessional training and general education in the Departments of Chemistry, Mathematics, and Physics. The faculty, active in research and graduate education, is at the same time vitally concerned with undergraduate teaching. Curricula of the School are designed to meet the needs of a wide variety of students ranging from those with little technical background who seek insight into the activities and accomplishments of physical sciences to those seeking a comprehensive understanding that will prepare them for creative research in physical science.

Over the course of the past century and a half, physics, chemistry, and mathematics have evolved into interdependent but separate intellectual disciplines. This development is reflected in the departmental structure of the School of Physical Sciences. In the same period, these fundamental disciplines have moved into domains of abstraction unimagined by early scientists. This trend to abstraction with its concomitant increase in understanding of the physical universe provides the major challenge to the student of the physical sciences. Mathematics, physics, and chemistry, while providing the foundation of the technology that dominates contemporary civilization, underlie to an ever-increasing extent the new developments in the biological and social sciences.

In recognition of the contribution students can make to the academic affairs of the School, a variety of responsibilities on School and Departmental committees are given to undergraduate and graduate students.

Degrees Offered in the School

Chemistry	B.A., M.A., Ph.D.
Mathematics	B.A., M.A., Ph.D.
Physics	B.A., M.A., Ph.D.

Criteria used by the School of Physical Sciences in selecting candidates for honors at graduation are as follows: Approximately 1% will be awarded *summa cum laude*, 3% *magna cum laude*, and 8% *cum laude*.

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 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. However, each department offers a selection of general education courses having few or no prerequisites. See the departmental listings for descriptions of these courses, e.g., Chemistry 20-22, Mathematics 15-16, and Physics 11-19.

Planning a Program of Study

Every undergraduate student who has chosen to major in Physical Sciences is assigned a faculty advisor with whom the student should consult in formulating a suitable program of study. (Should the student at any time be uncertain of the identity of his advisor, he may obtain this information in the office of the Dean or the appropriate Department Chairman.) In consultation with his advisor the student should plan a course of study leading to a major in one of the departments of the School. In carrying out this major, he may often concentrate very heavily in a second department within the School or in some other School. Occasionally students choose to pursue a double major. Permission to do so may be sought by a petition submitted to the office of the Dean of Physical Sciences.

All initial courses of study for majors include mathematics through calculus, and calculus is a prerequisite for much of the upper-division work in each major. A student interested in any of the physical sciences should continue his mathematical training beyond these prerequisite courses. Furthermore, the student interested in either physics or chemistry will usually include work in both of these subjects in his undergraduate career.

Although English is becoming increasingly the international language of science, much important scientific literature is still printed in foreign languages, and scientists need to communicate in person with foreign colleagues. Comprehension of at least one of the languages, French, German, or Russian, is an integral requirement of the preparation for majors in mathematics.

Precise and clear expression in written English will be expected in course work in the School. Students found deficient by the School may be required to enroll in English 28A-B-C.

Students in the physical sciences are urged to acquire a working knowledge of computer programming at an early stage of their university careers. This can be done by taking Information and Computer Science 1.

Requirements for the Bachelor's Degree

University Requirements: See page 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 Depart-

ment 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 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.

Much of the important chemical literature is being and has been printed in foreign languages, principally German, Russian, and French. Reading competence in one or more of these languages is desirable and many graduate schools require the demonstration of such competence as a prerequisite for an advanced degree. Chemistry majors are encouraged to acquire this competence.

A chemistry major who seeks a secondary teaching credential in chemistry is urged to consult with his advisor and with the Office of Teacher Education early in his undergraduate career. Chemistry majors who plan subsequent study in medical, dental, or other professional schools should request information concerning admission requirements directly from the schools which they seek to enter. Those intending to pursue graduate studies in chemistry should discuss their plans with their academic advisors.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

Basic Requirements: One year of calculus (Mathematics 2A-B-C or equivalent), one year of physics with laboratory for which calculus is a prerequisite (Physics 5A-B-C with laboratory or equivalent – Physics 3A-B-C with laboratory will be allowed for Chemistry-Biology double majors), one year of general chemistry with laboratory (Chemistry 1 and 1L, or 11 and 11L, or equivalent), one year of organic chemistry and laboratory (Chemistry 51 and 51L or equivalent), one year of physical chemistry (Chemistry 131A-B-C or equivalent), one quarter of quantitative analysis (Chemistry 150 or equivalent).

Electives: Five courses chosen from the elective list below. These must include at least two chemistry courses (Chemistry 180 may be counted no more than once) and at least one of the laboratory courses in the following laboratory course group: Chemistry 151, Chemistry 152, Biological Sciences 125, Physics 150, Physics 151, Physics 152, Physics 153.

Elective List: All chemistry courses numbered 151-263, Bio. Sci. 101F (Biochemistry), Bio. Sci. 101G (Molecular Biology), Bio. Sci. 123 (Biophysical Chemistry), Bio. Sci. 125 (Biochemical Methodology), Bio. Sci. 126A-B (Biochemistry), Bio. Sci. 128 (Molecular Genetics), Physics 111A-B (Classical Mechanics), Physics 112A-B (Electromagnetic Theory), Physics 115 (Statistical Physics), Physics 116 (Thermodynamics), Physics 130 (Quantum Mechanics), Physics 131 (Atomic Physics), Physics 132 (Nuclear Physics), Physics 133 (Solid State Physics), Physics 141

(Modern Optics), Physics 150 (Electronics), Physics 151 (Advanced Lab), Physics 152 (Advanced Lab), Physics 153 (Advanced Lab).

Scientific Breadth Requirement: A total of six additional four- or five-unit courses chosen from the offerings of the Departments of Mathematics and Physics and the School of Biological Sciences. (These may be taken on a Pass/Not Pass basis subject to the usual restrictions on Pass/Not Pass enrollment.)

Planning a Program of Study

The departmental requirements leave the student a great deal of latitude in his choice of courses – the student can choose to pursue interests ranging from biochemistry on the one hand to chemical physics on the other. Many of the basic requirements above coincide with those of the School of Biological Sciences, and a double major in Chemistry-Biology does not require much extra course work.

Students should consult with their advisors on courses of study. A chemistry major would usually be expected to take Chemistry 1 and 1L, Mathematics 2, ICS 1, and Physics 5A-B, plus one elective course per quarter during his freshman year. In the sophomore year the chemistry major would usually take Chemistry 51 and 51L, Mathematics 3, Physics 5C-D-E, plus an elective course per quarter. For the junior year Chemistry 131, Chemistry 150, Chemistry 152, and Chemistry 151, plus two elective courses per quarter would be advisable. In the senior year the student would be advised to take Chemistry 215 plus a number of electives. The foregoing program lists explicitly those chemistry courses which most graduate schools would require their entering students to have taken. It should be noted that the more biologically oriented student may elect not to take Physics 5D-E and Mathematics 3, while the more physically oriented student may choose to take more courses taught in the mathematics and physics departments. Courses listed as electives may be used as needed to satisfy University and Departmental requirements. It should be recognized that courses such as Biological Sciences courses which count toward Departmental requirements may be used simultaneously to satisfy University requirements if a student so desired. There is no language requirement, but chemistry majors are urged to obtain reading competence in a foreign language through course work.

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. 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.) Both plans require successful completion of the area examinations.

The procedures for passing the area examinations are described in more detail in the section on the Ph.D. degree. The thesis required for the M.A. degree summarizes the results of original research performed by the student under the supervision of a faculty member. No oral examination is required in defense of the dissertation submitted for the M.A. degree.

Doctor of Philosophy in Chemistry

The principal requirements for the Ph.D. Degree in Chemistry are six quarters in residence, admission to candidacy, and successful completion and defense of a dissertation reporting results of original research.

. **Residence.** As many as three of the six quarters in residence may be waived for students who have had graduate work at another institution.

. **Admission to candidacy.** Students must pass area examinations in each of these three general fields of chemistry: physical chemistry, organic chemistry, and inorganic and nuclear chemistry. These examinations presume thorough preparation in the various areas at the level of undergraduate instruction. Area examinations are given in September, February, and May and must be 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.

. **Course Requirements.** The student is required to pass, with an average grade of 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.

. **Foreign Language Requirements.** The dissertation committee may require the student to demonstrate proficiency in one modern foreign language with a signifi-

cant chemical literature, if the committee deems such proficiency requisite to pursuit of the student's dissertation research. The dissertation committee will establish the method of demonstrating foreign language proficiency.

5. **Dissertation.** A dissertation summarizing the results of original research performed by the student under the supervision of a faculty member in the Department is required for the Ph.D. degree. The criterion for acceptance by the Department of a dissertation is that its contents be suitable for publication in a scientific journal. The dissertation must not have been submitted to any other institution prior to its submission to the Chemistry Department at UCI.

6. **Defense of Dissertation.** Upon completion of the dissertation, the student will take an oral examination, open to the public, before a committee consisting of his research supervisor, two additional members of the Chemistry Department, and, when pertinent, a member of another department. The student will be examined on the contents of the dissertation and on topics in branches of chemistry which are related to the subject matter of the dissertation.

7. **Teaching.** The graduate program at Irvine enables all students to participate in some teaching during their graduate studies. A minimum of three quarters of teaching is required of Ph.D. candidates.

CHEMISTRY FACULTY

Everly B. Fleischer, Ph.D. Yale University, *Professor of Chemistry and Chairman of the Department*

David A. Brant, Ph.D. University of Wisconsin, *Associate Professor of Chemistry and Associate Dean of Physical Sciences*

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, *Professor of Chemistry*

Harold W. Moore, Ph.D. University of Illinois, *Associate Professor of Chemistry*

Robert T. McIver, Ph.D. Stanford University, *Assistant Professor of Chemistry*

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

Larry E. Overman, Ph.D. University of Wisconsin, *Assistant Professor of Chemistry*

F.S. Rowland, Ph.D. University of Chicago, *Professor of Chemistry*

Robert W. Taft, Ph.D. Ohio State University, *Professor of Chemistry*

Max Wolfsberg, Ph.D. Washington University, *Professor of Chemistry*

UNDERGRADUATE COURSES IN CHEMISTRY

1A-B-C General Chemistry (¾-¾-¾) F, W, S

Lecture, three hours; discussion, one hour. Introduction to the theoretical foundations and practice of modern chemistry. Topics of study: Stoichiometry; atomic and molecular structure; properties of gases, liquids, solids, and solutions; chemical equilibrium and thermodynamics; chemical kinetics; periodic properties and descriptive chemistry of the elements. Prerequisites for 1A: high school chemistry, three years of high school mathematics; high school physics is recommended. (Students lacking some prerequisites for Chemistry 1A may be admitted by permission of the Department.) Prerequisites for 1B: passing grades in

Chemistry 1A and 1LA. Prerequisites for 1C: passing grades in Chemistry 1B and 1LB. Corequisites for 1A-B-C: concurrent enrollment in the corresponding segment of Chemistry 1L. Concurrent enrollment in calculus will be useful but is not required.

LA-B-C General Chemistry Laboratory (½-½-½) F, W, S
Laboratory, four hours. The course provides experience in the fundamental manipulative aspects of chemistry, and chemical practice and principles are illustrated through appropriately chosen experiments. Prerequisites for 1LA: none. Prerequisites for 1LB: passing grades in Chemistry 1A and 1LA. Prerequisites for 1LC: passing grades in Chemistry 1B and 1LB. Corequisites for 1LA-B-C: concurrent enrollment in the corresponding segment of Chemistry 1.

1B-C Honors General Chemistry (¾-¾) W, S
Lecture, three hours; discussion, one hour. 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. Prerequisites: successful completion of previous quarters of General Chemistry and General Chemistry Laboratory and permission of the Department. Corequisites: concurrent enrollment in the corresponding segment of Chemistry 11L.

1LB-C Honors General Chemistry Laboratory (½-½) W, S
Laboratory, four hours. The course is similar to Chemistry 1LB-C but provides greater opportunity for exercise of individual initiative in design and execution of experiments. Prerequisites: successful completion of previous quarters of General Chemistry and General Chemistry Laboratory and permission of the Department. Corequisites: concurrent enrollment in the corresponding segment of Chemistry 11.

0 Scientific Controversy (1) F
Lecture, three hours. The speculations, arguments plus counter-arguments, false leads, and occasional fierce controversies that produce "well-established scientific knowledge" have an intellectual flavor that contrasts sharply with the processes required in learning the details of presently accepted scientific understanding. The nature of the scientific process is examined through study of specific arguments and controversies, both past and current. Current topics such as protective innoculation, pesticides in the environment, fluoridation, and artificial radioactivity have been considered in earlier versions of this course. Specific topics determined at beginning of course. Chemistry 1A-B-C not required.

1 Chemistry of Nutrition (1) S
Lecture, three hours. The chemistry of nutrition is one of the more interesting illustrations and potentially beneficial applications of chemical knowledge. This course will consider the properties, chemical reactions, and biological functions of the 40 chemical ingredients known to be essential in the human diet. Class time will be primarily devoted to discussion and clarification of selected readings; a small amount of laboratory work will be included. Chemistry 1A-B-C not required.

2 Radioactivity and Radiation (1)
Lecture, three hours. A study of the impact of nuclear science and technology on society. The uses of nuclear energy for electric power generation, transportation, medicine, criminology, and scientific research will be examined. Chemistry 1A-B-C not required. Not offered in 1972-73.

1A-B-C Organic Chemistry (¾-¾-¾) F, W, S
Lecture, three hours; discussion, one hour. 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. Prerequisites for 51A: Chemistry 1A-B-C and 1LA-B-C. Prerequisites for 51B: passing grades in Chemistry 51A and 51LA. Prerequisites for 51C: passing grades in Chemistry 51B and 51LB. Corequisites for 51A-B-C: concurrent enrollment in the corresponding segment of Chemistry 51L.

1LA-B-C Organic Chemistry Laboratory (½-½-½) F, W, S
Laboratory, four hours. The course provides experience in modern techniques of organic chemistry, using selected experiments to illustrate the topics introduced in Chemistry 51A-B-C. Prerequisites for 51LB: passing grades in Chemistry 51A and 51LA. Prerequisites for

51LC: passing grades in Chemistry 51B and 51LB. Corequisites for 51LA-B-C: concurrent enrollment in the corresponding segment of Chemistry 51.

101A-B Chemistry of Environmental Pollution (1-1) W, S
Lecture, three hours. The chemistry of air, water, and soil pollution will be examined. The chemical fate of pollutants will be traced from their sources, and remedial alternatives to current pollution patterns will be discussed from a chemical point of view. Prerequisites: Chemistry 1A-B-C and 51A.

131A-B-C Physical Chemistry (1-1-1) F, W, S
Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 1A-B-C, Physics 5A-B, Mathematics 2A-B-C. Prerequisites for 131B-C: successful completion of previous courses in sequence.

131A (1) F
Thermodynamics of pure and mixed systems in the gas and condensed phases. Development of the conditions of chemical and heterogeneous equilibrium.

131B (1) W
Chemical statistics and chemical dynamics. Development of the principles of kinetic molecular theory, molecular thermodynamics, and chemical kinetics.

131C (1) S
Quantum chemistry, spectroscopy, and molecular structure. Development of the principles of chemical bonding, spectroscopy, and molecular structure determination.

150 Quantitative Analysis (1) F
Lecture, three hours; laboratory, six hours. Volumetric, gravimetric, colorimetric, and electrochemical methods are illustrated in experiments which determine the chemical composition of mixtures. Theoretical considerations of analytical chemistry are treated in the lectures, as background both for the laboratory portion of this course and for Instrumental Analysis (Chemistry 151). Prerequisites: Chemistry 1A-B-C.

151 Instrumental Analysis (1) S
Lecture, three hours; laboratory, four hours. Principles and methods of modern instrumental chemical analysis (ultraviolet-visible-infrared absorption spectrophotometry, gas chromatography, radiochemical assay, electrochemistry, fluorometry, magnetic resonance spectroscopy, mass spectroscopy, etc.) are studied. Prerequisites: Chemistry 131A and 150.

152 Physical Chemistry Laboratory (1) W
Laboratory, ten hours. For Chemistry majors and others interested in the observational basis and techniques of physical chemistry. Experiments deal with gases, solutions, chemical kinetics, spectroscopy, and other topics, some of which may be proposed by the student. Prerequisites: Chemistry 131B (may be taken concurrently).

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. Not offered in 1972-73.

170 Radioisotope Techniques (1) W
Lecture, three hours; laboratory, four to six hours. Basic theory and practice of production, separation, and determination of radioactive isotopes with emphasis on particular applications in chemistry and biology. Prerequisite: Chemistry 150. Others may be admitted by consent of the Department.

180 Undergraduate Research (1-1-1) F, W, S
The student wishing to engage in research for credit should arrange with a member of the staff to sponsor and supervise such work. Prerequisite: consent of a faculty sponsor.

GRADUATE COURSES IN CHEMISTRY

201 Kinetics and Mechanism of Organic Reactions (1) W
Lecture, three hours. Emphasizes the quantitative aspects of organic chemistry as they apply to mechanistic investigations. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

202 Physical Organic Chemistry (1) S
Lecture, three hours. Covers three broad areas: structure and spectroscopy, stereochemistry and conformational analysis, and molecular orbital theory and bonding. The emphasis and subjects will vary from year to year. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

205 Modern Synthetic Reactions (1) F
Lecture, three hours. Covers recent synthetic developments and techniques in organic synthesis. The emphasis will be on both synthetic application and mechanistic interpretations. Prerequisites: Chemistry 51A-B-C.

211 Chemical Thermodynamics (1) W
Lecture, three hours. A detailed discussion of the fundamental principles of chemical thermodynamics will be undertaken. The thermodynamics of single- and multi-component gas phase and condensed phase systems will be discussed. Prerequisites: Chemistry 131A-B-C.

213 Chemical Kinetics (1) F
Lecture, three hours. Surveys gas phase and organic reaction mechanisms and their relationship to kinetic rate laws; treats the basic theory of elementary reaction rates. A brief presentation of modern cross-sectional kinetics is included. Prerequisites: Chemistry 131A-B-C.

215 Inorganic Chemistry I (1) W
Lecture, three hours. Principles of modern inorganic chemistry with applications to chemical systems of current interest. Major topics include the nature and properties of the chemical bond, stereochemistry of inorganic compounds, the structures, properties, and reactions of coordination and organometallic compounds, and selected topics from the current literature. Prerequisites: Chemistry 51A-B-C and 131A-B-C.

216 Inorganic Chemistry II (1) F
Lecture, three hours. Advanced topics in structural, synthetic, and mechanistic aspects of inorganic chemistry. Emphasis will vary at the discretion of the lecturer. Prerequisites: Chemistry 51A-B-C and 131A-B-C. Not offered in 1972-73.

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. Not offered in 1972-73.

231 Quantum Chemistry (1) F
Lecture, three hours; discussion, one hour. Fundamentals of quantum mechanics will be discussed. The application of quantum mechanics to problems in atomic systems will be considered. Prerequisites: Chemistry 131A-B-C.

232 Statistical Mechanics (1) S
Lecture, three hours; discussion, one hour. The fundamental postulates of statistical mechanics will be examined and the formalism of the method developed. Applications to statistical thermodynamic problems of chemical interest, e.g., dilute and real gases, crystals, liquids, solutions, chemical equilibrium, will be considered. Prerequisites: Chemistry 131A-B-C.

233 Nuclear and Radiochemistry (1) W
Lecture, three hours. Brief introductions are presented to nuclear structure, nuclear reactions, nuclear energy, radiochemical analysis, isotope effects, radiation chemistry, hot-atom chemistry, tracer methods, and nuclear processes as chemical probes. Prerequisites: Chemistry 131A-B-C or consent of the Department. Not offered in 1972-73.

234 Advanced Chemical Kinetics (1)
Variable format. In some years it has been identical with the winter course in Gas Kinetics, which is given periodically for a nationwide audience. On other occasions it has been a cluster of lecture series on various modern kinetics topics. Prerequisite: Chemistry 213 or consent of the Department.

235 Molecular Quantum Mechanics (1) S
Lecture, three hours; discussion, one hour. The application of quantum mechanics to the calculation of molecular properties will be discussed. Attention will be given to the electronic structure of molecules. Prerequisites: Chemistry 231 or equivalent.

240 Forensic Chemistry (1)
Lecture, three hours. Some of the lectures may be presented by practicing criminalists. The application of chemical techniques to the problems of crime investigation will be discussed. Prerequisites: Chemistry 51A-B-C and Chemistry 131A-B-C or consent of instructor.

251 Special Topics in Organic Chemistry (1)
Advanced topics in organic chemistry are discussed. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

252 Special Topics in Physical Chemistry (1)
Advanced topics in physical chemistry are discussed. The format, content, and frequency o the course are variable. Prerequisite: consent of the Department.

253 Special Topics in Inorganic Chemistry (1)
Advanced topics in inorganic chemistry are discussed. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

261 Biomolecular Structure (1) F
Lecture, three hours. The structure of biomolecules as determined both in the solid state and in solution will be discussed. Both diffraction and spectroscopic techniques will be discussed. Prerequisites: Chemistry 131A-B and Chemistry 131C or Bio. Sci. 123.

262 Biopolymers in Solution (1) W
Lecture, three hours. The thermodynamics and statistical mechanics of biopolymers will be covered. Both equilibrium and hydrodynamic methods will be discussed. Techniques such a viscosity, sedimentation, osmotic pressure, and light scattering will be covered. Prerequisites: Chemistry 131A-B and Chemistry 131C or Bio. Sci. 123.

263 Biochemical Dynamics (1) S
Lecture, three hours. This course will discuss enzyme kinetics. A general discussion of mult step kinetics will be covered. Active sites, factors contributing to enzymic catalysis, and chemistry and biochemistry of cofactors will be discussed. Prerequisites: Chemistry 131A-I and Chemistry 131C or Bio. Sci. 123. Not offered in 1972-73.

280 Research (½ to 3) F, W, S
Organic synthesis, reaction kinetics, radiochemistry, nuclear chemistry, photochemistry, theoretical chemistry, physical organic chemistry, inorganic chemistry, physical chemistry of macromolecules. Prerequisite: permission of the Department.

290 Seminar (1) F, W, S
Weekly seminars and discussions on general and varied topics of current interest in chemistry. Prerequisite: graduate standing.

291 Research Seminar (1)
Seminars organized for detailed discussion of research problems of current interest in the Department. The format, content, and frequency of the course are variable. Prerequisite: consent of the Department.

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

The following requirements apply to freshmen entering UCI in 1970-71 and thereafter. All other students are subject only to the requirements in force at UCI at the time in which they became freshmen; however, no students are required to take more than *one year* of a foreign language.

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

GRADUATE PROGRAMS

Graduate courses are designed to meet the needs of students doing graduate work in mathematics and in such disciplines as require graduate-level mathematics for their study. Among the fields covered are analysis, algebra, functional analysis, geometry and topology, probability and statistics, ordinary and partial differential equations, and mathematical logic.

In addition to formal courses, there are seminars for advanced study toward the Ph.D. in various fields of mathematics. Topics will vary from year to year. Each seminar is conducted by a staff member specializing in the subject studied. Enrollment will be subject to the approval of the instructor in charge.

Master of Arts in Mathematics

The Master's Degree programs serve a dual purpose: for some they serve as terminal programs of mathematical education; 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 and analysis are required for this degree. Examinations, written or oral, will be given to determine the relevant preparation of candidates. For Master's candidates, the ability to read the literature of mathematics in one of the foreign languages, French, German, or Russian, is required.

Plan I for the Master's Degree requires the equivalent of the successful completion of at least eight courses (at least five at the graduate level), the writing of an accept-

able research dissertation, and the passing of examinations (written or oral) designed to test the competence of the candidate in the fields of algebra and analysis.

Plan II for the Master's Degree requires the equivalent of the successful completion of at least 12 courses (at least eight at the graduate level) and the passing of examinations (written or oral) designed to test the competence of the candidate in the fields of algebra and analysis.

The residence requirement for the Master's Degree consists of full-time registration for three quarters just prior to the granting of the degree. It is possible for a candidate to take leaves of absence between pairs of these three quarters by making formal arrangements with the Graduate Division.

Doctor of Philosophy in Mathematics

The Doctor of Philosophy degree requires successful completion of a program of courses, seminars, and individual study that prepares a candidate for a career in mathematical teaching and research. He is expected to have breadth of knowledge in that he is required to demonstrate advanced knowledge and competence in algebra and analysis. He is expected to have depth of knowledge in that he is required to be profoundly familiar with a well-defined subject in mathematics, e.g., Banach algebras, group theory, operator theory, probability theory, topology, categorical algebra.

There are two general requirements for the Ph.D.: the passing of written and/or ora examinations, and 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 th Graduate Division operating through a committee. This committee, consisting of scholars in the field of concentration and scholars in other fields, decides on admission of students to candidacy and then guides and supervises candidates through their research, study, and writing for the Doctor of Philosophy degree.

Doctoral candidates must be enrolled as full-time students for the six quarters preceding the granting of their degrees.

MATHEMATICS FACULTY

Ray A. Kunze, Ph.D. University of Chicago, *Professor of Mathematics, Chairman of the Department*

Robert J. Whitley, Ph.D. New Mexico State University, *Professor of Mathematics, Vice Chairman of the Department*

Takeo Akasaki, Ph.D. University of California, Los Angeles, *Assistant Professor of Mathematics*

Frank B. Cannonito, Ph.D. Adelphi University, *Associate 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*
Richard A. Denholm, Ed.B. Western Reserve University, *Supervisor of Teacher Education, Lecturer in Mathematics*
William F. Donoghue, Jr., Ph.D. University of Wisconsin, *Professor of Mathematics*
William H. Fellner, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics and Medicine*
Mark Finkelstein, Ph.D. Stanford University, *Associate Professor of Mathematics*
Stephen D. Franklin, Ph.D. University of Chicago, *Assistant Professor of Mathematics*
John M. Grover, Ph.D. University of California, Los Angeles, *Assistant Professor of Mathematics*
John C. Holladay, Ph.D. Yale University, *Professor of Mathematics*
John M. Hosack, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics*
Richard K. Juberg, Ph.D. University of Minnesota, *Associate Professor of Mathematics*
Gerhard K. Kalisch, Ph.D. University of Chicago, *Professor of Mathematics*
Stepan Karamardian, Ph.D. University of California, Berkeley, *Associate Professor of Mathematics and Administration*
Meinhard E. Mayer, Ph.D. Parhon University (Rumania), *Professor of Mathematics and Physics*
George S. McCarty, Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics*
Charles M. Naylor, Ph.D. Stanford University, *Assistant Professor of Mathematics*
David C. Newell, Ph.D. Brandeis University, *Assistant Professor of Mathematics*
Janet Fisher-Palmquist, Ph.D. Brandeis University, *Assistant Professor of Mathematics*
Paul H. Palmquist, Ph.D. University of Chicago, *Assistant Professor of Mathematics*
Robert C. Reilly, Ph.D. University of California, Berkeley, *Assistant Professor of Mathematics*
Bernard Russo, Ph.D. University of California, Los Angeles, *Associate Professor of Mathematics*
Stephen Scheinberg, Ph.D. Princeton University, *Associate Professor of Mathematics*
William H. Smoke, Ph.D. University of California, Berkeley, *Associate Professor of Mathematics*
Noboru Suzuki, Ph.D. Tohoku University, *Professor of Mathematics*
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, *Associate Professor of Mathematics*
James J. Yeh, Ph.D. University of Minnesota, *Professor of Mathematics*

LOWER-DIVISION COURSES IN MATHEMATICS

1 Elementary Mathematics (1) F
Review of elementary algebra, graphs, functions, curve plotting, trigonometry, logarithms, theory of equations. This course will be waived, as a prerequisite for Math 2A and 5A, by

successfully passing an examination administered by the Department at the beginning of the fall quarter.

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 and several real variables are discussed together with applications of these topics. Prerequisite: Math 1 or satisfactory performance on a qualifying examination given at the beginning of the fall quarter. (Students who have completed 3-4 years of high school mathematics should normally pre-enroll in Math 2A rather than Math 1.)

3A-B-C Topics in Second-Year Calculus (1-1-1) F, W, S
Topics in second-year mathematics such as vector analysis, differential equations, linear algebra will be given in self-contained quarter courses. Prerequisites: Mathematics 2A-B-C.

4A-B-C Liberal Arts Mathematics (1-1-1) F, W, S
A course designed to reveal mathematics as a science and an art. Prerequisites: one year high school algebra, one year high school geometry.

4A (1) F
Structure, arithmetic, and algebra of the real number system; elementary number theory and numeration.

4B (1) W
Axiomatic method, application to group theory and geometry.

4C (1) S
Sets, logic, introduction to calculus and applied mathematics.

5A-B-C Mathematics for the Social & Natural Sciences I (1-1-1) F, W, S
Each course in the sequence is a prerequisite for those following. This course deals with probability theory and its applications to models and to statistics. Topics in probability theory include probability models, sampling, product models, conditional probability and independence, binomial distribution, and random variables. Topics in statistics include sampling and sample distributions, estimation, hypotheses testing, and normal approximation to the binomial. The course normally includes enough calculus to deal with the normal distribution and continuous distributions. Prerequisite: Math 1 or satisfactory performance on a qualifying examination given at the beginning of the fall quarter. (Students who have completed 2-3 years of high school mathematics should normally pre-enroll in Math 5A rather than Math 1.)

6A-B-C *Mathematics for the Social & Natural Sciences II* (1-1-1) F, W, S
Topics normally include matrix algebra, linear programming, Markov chains, and differential difference equation models for social science. Prerequisites: Mathematics 5A-B-C or 2A-B-C and consent of instructor.

10A-B-C Topics in Mathematics (1-1-1) F, W, S
A course designed to acquaint the beginning student with some of the ideas of modern mathematics that are independent of the calculus, e.g., graph theory, finite groups, number theory. Each quarter is normally devoted to a different topic, and it is not required that the student enroll for the entire sequence. Prerequisites: Mathematics 2A-B-C or consent of instructor.

11A-B-C Geometry for High School Teachers (1-1-1) F, W, S
An integrated treatment of congruence, line reflections, elliptic geometry, orientability and angle sums, inversions, geometric algebra, hyperbolic geometry — including length distance and area, affine geometry — the line, the plane, the Euclidean plane, pairs of coordinate systems for the affine plane, orientation, separation and order properties of the plane. Prerequisites: Mathematics 2A-B-C or equivalent or Mathematics 4A-B-C.

15 What is Mathematics? (1) W
A course intended to acquaint non-specialists with the main currents and ideas in mathemat ics as an art and science. Technical material will be kept at a minimum, consistent with developing an appreciation of the scope and methods of modern mathematics. Not offered every year.

16 Mathematical Recreations (1) S
Mathematical analysis of a number of diversions such as games, puzzles, and tricks. The emphasis is on items where the analysis depends more on an understanding of the mathematical concepts and less on complications involving extensive memory, or a deep knowledge of scientific principles. Not offered every year.

UPPER-DIVISION COURSES IN MATHEMATICS

101A-B Topics in Mathematics (1-1) W, S
Similar in concept to the 10A-B-C sequence but at a more advanced level. Prerequisites: Mathematics 3A-B-C.

104E Foundations of Arithmetic and Algebra (1-1) F, S
This course meets the certification requirements for the teaching credential in the State of California. Not counted as upper-division credit for majors.

105A-B-C Numerical Analysis (1-1-1) F, W, S
Interpolation, polynomial approximation, numerical differentiation and integration, difference equations, iterative solutions of nonlinear equations. Prerequisites: Mathematics 142A-B-C or 143A-B-C or consent of instructor.

110A-B-C Topology (1-1-1) F, W, S
A study of the topology of the real line and Euclidean space and an introduction to metric spaces and general topological spaces. Prerequisites: Mathematics 140A-B-C or consent of instructor.

111A-B-C Foundations of Geometry (1-1-1) F, W, S
An integrated treatment of congruence, line reflections, elliptic geometry, orientability and angle sums, inversions, geometric algebra, hyperbolic geometry. Prerequisites: Mathematics 140A-B-C or consent of instructor.

112A-B-C Introduction to Differential Geometry (1-1-1) F, W, S
Introduction to classical topics in differential geometry. Prerequisites: Mathematics 140A-B-C or consent of instructor.

115A-B-C Geometry and the Classical Groups (1-1-1) F, W, S
An investigation of the classical linear groups, their structure and representations. Applications to geometry. Introduction to Lie theory. Prerequisites: Mathematics 140A-B-C or consent of instructor.

120A-B-C Algebra I (1-1-1) F, W, S
Introduction to concepts in algebra with emphasis on linear algebra. Topics to include vector spaces, linear transformations, duality, inner-product spaces, change of basis, spectral theory, Jordan canonical form, minimal polynomials, Cayley-Hamilton theorem. Prerequisites: Mathematics 140A-B-C or consent of instructor. (Required course for mathematics majors.)

121A-B-C Algebra II (1-1-1) F, W, S
Continuation of 120A-B-C. An introduction to abstract algebra, including elementary group theory, linear and multilinear algebra, and the theory of rings and fields. Prerequisites: Mathematics 120A-B-C or consent of instructor.

122A-B-C Theory of Numbers (1-1-1) F, W, S
Selected topics in the theory of numbers. Prerequisites: Mathematics 140A-B-C or consent of instructor.

130A-B-C Probability and Stochastic Processes (1-1-1) F, W, S
An informal introduction to the theory, with applications in the sciences. In the first quarter, topics from probability theory necessary for statistics (131A-B) are covered. Prerequisites: Mathematics 2A-B-C or 6A-B-C or 140A-B-C or consent of instructor.

131A-B-C Mathematical Statistics (1-1-1) F, W, S
An introduction to the theory of statistical inference, including point and interval estimation, hypotheses testing and linear models. Sampling theory. Prerequisites: Mathematics 2A-B-C.

140A-B-C Elementary Analysis I (1-1-1) F, W, S
A rigorous treatment of the calculus, including the real number system, functions and integration. Prerequisites: Mathematics 2A-B-C or consent of instructor. (Required course for mathematics majors.)

141A-B-C Elementary Analysis II (1-1-1) F, W, S
Continuation of Elementary Analysis I. Prerequisites: Mathematics 140A-B-C or consent of instructor. (Strongly suggested for mathematics majors.)

142A-B-C Ordinary and Partial Differential Equations (1-1-1) F, W, S
An introduction to differential equations for students of mathematics, physics, and engineering. The first quarter is devoted to ordinary differential equations, the last two quarters to partial differential equations and related topics. Prerequisites: Mathematics 140A-B-C or consent of instructor.

143A-B-C Applied Analysis (1-1-1) F, W, S
An introduction to applied mathematics, especially differential equations, for students in engineering and physics. The first quarter is concerned with linear ordinary differential equations. Topics from series expansions, complex analysis, Fourier series, and introductory partial differential equations will be covered second quarter. The third quarter is devoted to partial differential equations. Prerequisites: Mathematics 3A-B-C or consent of instructor.

144A-B Introduction to Complex Variables (1-1) W, S
The Cauchy integral formula, the maximum modulus theorem, Taylor and Laurent series, and the residue theorem. Prerequisites: Mathematics 140A-B-C, 3A-B-C, or consent of instructor.

145A-B-C Topics in Analysis (1-1-1) F, W, S
This course will provide a second year in classical analysis for mathematicians, physical scientists, and engineers. Prerequisites: Mathematics 140A-B-C or consent of instructor.

150A-B-C Mathematical Logic and Set Theory (1-1-1) F, W, S
The propositional calculus. First order predicate calculus, consistency, completeness. The choice axiom. Well-ordering. Ordinal and cardinal numbers. Prerequisites: Mathematics 121A-B-C or consent of instructor.

155A-B-C Automata Theory and Recursion Theory (1-1-1) F, W, S
Introduction to the abstract theory of computability by finite automata and Turing machines. Applications to formal languages, grammars, undecidability. Prerequisites: Mathematics 140A-B-C or 121A-B-C or consent of instructor.

170A-B-C Statistical Methods (1-1-1) F, W, S
A survey of the classical methods of estimation and testing including applications to linear regression and analysis of variance, with examples from the sciences. Designed primarily for research workers in the sciences. Prerequisites: Mathematics 2A-B-C or 5A-B-C and 6A or consent of instructor.

191A-B-C Introduction to the Theory of Games with Applications (1-1-1) F, W, S
The classical von Neumann theory of finite two and n-person games. The theory will be applied to specific games including chess, poker, Go, and blackjack and to economic behavior including the securities markets. Prerequisites: Mathematics 140A-B-C or consent of instructor.

199A-B-C Special Studies in Mathematics (1-1-1) F, W, S
For outstanding undergraduate mathematics majors in supervised but independent reading or research of mathematical topics of current interest. Prerequisite: Department approval.

GRADUATE COURSES IN MATHEMATICS

210A-B-C Real Analysis (1-1-1) F, W, S
Measure theory, Lebesgue integral, Lp spaces, Radon-Nikodym theorem, differentiation, metric spaces, Banach spaces, Daniell integral. Prerequisites: Mathematics 140A-B-C, or equivalent of these, or consent of instructor.

220A-B-C Analytic Function Theory (1-1-1) F, W, S
Standard theorems about analytic functions. Harmonic functions. Normal families. Confor-

mal mapping. Prerequisites: Mathematics 140A-B-C, 141A-B-C, 110A-B-C, or equivalent of these, or consent of instructor.

221A-B Several Complex Variables (1-1) F, W
Holomorphy domains, Plurisubharmonic functions. Holomorphy envelopes, integral representations. Applications in partial differential equations and quantum field theory. Prerequisites: Mathematics 220A-B-C, or equivalent, or consent of instructor.

230A-B-C Algebra (1-1-1) F, W, S
Elements of the theories of groups, rings, fields, modules, Galois theory. Modules over principal ideal domains. Artinian, Noetherian, and semisimple rings and modules. Prerequisites: Mathematics 120A-B-C, 121A-B-C, or equivalent, or consent of instructor.

231A-B-C Group Theory (1-1-1) F, W, S
Introduction to the abstract theory of groups. Prerequisites: Mathematics 121A-B-C, or equivalent, or consent of instructor.

232A-B-C Theory of Finite Groups (1-1-1) F, W, S
Introduction to the theory of finite groups. Representation theory, character theory, Thompson transitivity theorem. Prerequisites: Mathematics 231A-B-C or consent of instructor.

234A-B-C Topics in Algebra (1-1-1) F, W, S
Group theory, homological algebra, and other selected topics. Prerequisites: Mathematics 230A-B-C or consent of instructor.

240A-B-C Differential Geometry (1-1-1) F, W, S
Differential manifolds, differential forms, integration, introduction to Lie groups, connections, Riemannian manifolds, curvature and topology, calculus of variations in the large, immersions and imbeddings. Prerequisites: Mathematics 110A-B-C and 141A-B-C or consent of instructor.

241A-B-C Topics in Lie Groups and Lie Algebras (1-1-1) F, W, S
Introduction to Lie theory with emphasis on the structure of semisimple matrix groups and their representations. Prerequisites: linear algebra, point set topology, and basic analysis.

250A-B-C Algebraic Topology (1-1-1) F, W, S
Topics covered will vary with instructor. Prerequisites: Mathematics 121A-B-C and 110A-B-C, or equivalent, or consent of instructor.

254A-B-C Topics in Topology (1-1-1) F, W, S
A continuation of 250C, topics being selected by the instructor. Prerequisites: Mathematics 250A-B-C or consent of instructor.

260A-B-C Functional Analysis (1-1-1) F, W, S
Elements of Banach space theory, operator theory, Banach algebra theory including structure theory of commutative algebras and spectral theory in Hilbert space. Prerequisites: Mathematics 210A-B-C and 220A-B-C or consent of instructor.

261A-B-C Operator Theory (1-1-1) F, W, S
Elements of topological linear spaces, Hilbert spaces, spectral theorems and multiplicity theory, rings of operators, representation of groups and rings. Prerequisites: Mathematics 210A-B-C or 221A-B-C or consent of instructor.

268A-B-C Topics in Functional Analysis (1-1-1) F, W, S
Selected topics such as spectral theory, abstract Harmonic analysis, Banach algebras, operator algebras. Prerequisite: Consent of instructor.

270A-B-C Probability (1-1-1) F, W, S
Probability spaces, distribution and characteristic functions. Strong limit theorems. Limit distributions for sums of independent random variables. Conditional expectation and martingale theory. Stochastic processes. Prerequisites: Mathematics 130A-B-C and 210A-B-C or consent of instructor.

271A-B-C Stochastic Processes (1-1-1) F, W, S
Processes with independent increments, Wiener and Gaussian processes, function space integrals, stationary processes, Markov processes. Prerequisites: Mathematics 210A-B-C or consent of instructor.

272A-B-C Integration in Function Spaces (1-1-1) F, W, S
Brownian motion, Wiener integral, Feynman integral. Applications to partial differential equations. Gaussian processes, integration on Hilbert space. Generalized stochastic process. Prerequisites: Mathematics 271A-B-C or consent of instructor.

273A-B-C Statistical Inference (1-1-1) F, W, S
Classical theorems of statistical inference from a mathematically rigorous point of view. Statistical decision theory. Prerequisites: Mathematics 210A-B-C or consent of instructor.

274A-B-C Topics in Probability (1-1-1) F, W, S
Prerequisites: Mathematics 270A-B-C or consent of instructor.

280A-B-C Mathematical Logic (1-1-1) F, W, S
Introduction to model theory with emphasis on ultraproducts, elementary classes, and saturated models. Applications to algebra and set theory. 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 through the Gödel-Cohen theory. Prerequisites: Mathematics 150A-B-C or consent of instructor.

295A-B-C Partial Differential Equations (1-1-1) F, W, S
Local and global theory of partial differential equations: analytic, geometric, and functional analytic methods. Prerequisites: Mathematics 210A-B-C, or equivalent, or consent of instructor.

297A-B-C Colloquium (¼-¼-¼) F, W, S
Weekly colloquia on topics of current interest in mathematics. Prerequisite: graduate standing.

298A-B-C Seminar (¼ to ¾) F, W, S
Seminars organized for detailed discussion of research problems of current interest in the Department. The format, content, frequency, and course value are variable. Prerequisite: permission of the Department.

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

DEPARTMENT OF PHYSICS

The Physics Department is interested in giving its majors and graduate students the opportunity to be heard in all matters directly concerned with undergraduate and graduate instruction.

At the present time undergraduate physics majors and physics graduate students participate in the academic affairs of the Physics Department by serving as full members of the student-faculty teaching evaluation committee and the computer users advisory committee. Undergraduate students also serve on the department's undergraduate curriculum committee.

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 10-20
Intended Audience	Premedical students, biological sciences majors	Physics, chemistry, and engineering majors	Nonscience majors
Mathematical Prerequisites	Algebra and trigonometry; concurrent enrollment in Math 2 (Calculus) recommended	Calculus (Mathematics 2A); knowledge of computer programming is recommended	None
Preparation for Advanced Courses	Physics 5C with permission	All upper-division courses in physics	None

Requirements for the Bachelor's Degree

University Requirements: See page 22.

School Requirements: None.

Departmental Requirements

Physics 5A-B-C-D-E with laboratory; six quarter courses numbered between 110 and 149; two quarters of advanced laboratory (Physics 151-153); Mathematics 2A-B-C; Mathematics 3A-B-C or 140A-B-C; three courses from Mathematics 141A-B-C, 142A-B-C, 144A-B-C, or Physics 161A-B-C with Physics 161A-B-C particularly recommended; and 3 additional upper-division courses chosen from the Schools of Physical Sciences, Biological Sciences, Engineering, or the Department of Information and Computer Science. Alternative requirements will be developed for students with special interests.

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 10-20.

A student who decides to major in Physics after completing Physics 3 with a grade of A or B may, with the consent of the Department, enroll in Physics 5C. The premedical physics requirement may be met with Physics 3 or with Physics 5A-B-C.

Physics 5 is an intensive five-quarter course for physics, chemistry, engineering, and other students interested in a careful quantitative approach to the subject. Laboratory work accompanies the course. Students expecting to enroll in the entire five-quarter sequence of Physics 5 should enroll in Mathematics 3A concurrent with Physics 5C. Students planning to enroll in only three quarters of Physics 5 need not enroll in Mathematics 3A. The recommended knowledge of computer programming may be gained by enrolling in Information and Computer Science 1, usually in the fall quarter of the freshman year. Biological sciences majors with facility in calculus should consider Physics 5 as an alternative to Physics 3.

Physics courses numbered between 10 and 20 are one-quarter general education courses intended for nonscience majors. The content and format of these courses will vary from year to year. In general, these courses will not include regular laboratory work.

Courses numbered above 110 are for physics majors and other qualified students. This series of courses in the upper-division curriculum is sufficiently broad to provide programs both for the physics major who does not intend to pursue the study of physics beyond the Bachelor's Degree level and for the physics major preparing for a professional career in physics. The physics major with a career goal in medicine, law, teaching, or business, for example, should emphasize the Physics 130 series, which covers most of the important phenomena of physics. The physics major preparing for graduate work in physics should include most of the Physics 111 series in his program. Any major who is so inclined can take more than the minimum two quarters of advanced laboratory work. Able students may begin the Physics 111 series in their sophomore year.

Courses numbered between 110 and 130 emphasize the mathematical and theoretical structures that have unified our understanding of nature. Those numbered between 131 and 149 emphasize particular domains of the structure of matter. Laboratory work is assigned to separate courses, 151-153.

The programs of transfer students will be decided after individual consultation.

Since many graduate physics departments require a reading knowledge of one foreign language, physics majors planning graduate work should, if possible, study some Russian, German, or French. Introductory courses in biology and chemistry are also recommended options. Every physics major should avoid overspecialization and wisely use his undergraduate years to explore some areas remote from physics.

Sample Programs

A typical course program for physics majors considering the possibility of graduate study in physics or astronomy is shown below. Three of the electives in the senior year may be physics graduate courses. A student with a weak background may want to postpone Physics 130 and Physics 131 until the senior year.

	FALL	WINTER	SPRING
	Math. 2A	Math. 2B	Math. 2C
	Chem. 1A	Chem. 1B	Chem. 1C
FRESHMAN	ICS 1	Physics 5A	Physics 5B
	Elective	Elective	Elective
	Math. 3A	Math. 3B	Math. 3C
	Physics 5C	Physics 5D	Physics 5E
SOPHOMORE	Elective	Elective	Elective
	Elective	Elective	Elective
	Physics 161A	Physics 161B	Physics 161C
	Physics 111A	Physics 111B	Physics 112A
JUNIOR	Physics 130	Physics 131	Physics Elective
	Elective	Elective	Elective
	Elective	Math 144A	Math 144B
	Physics 151	Physics 152	Physics Elective
SENIOR	Physics 112B	Physics 115	Physics 116
	Elective	Elective	Elective

Physics majors with interests other than graduate work in physics or astronomy need not take as many physics courses as indicated above. As a guide to preparing a more suitable program, the department makes the following suggestions.

The course program of physics majors considering the possibility of graduate school in engineering should contain at least the following courses:

Physics 111A-B, 112A-B and three to six engineering courses.

The course program of physics majors considering graduate work in chemistry, biology, or various interdisciplinary areas should contain:

Physics 111A, 112A-B, 115, 130, 131; Chemistry 51A-B-C; and Biology 101A-B-C.

The course program of physics majors considering a teaching career in the public schools or the community colleges should contain at least:

Physics 111A, 112A-B, 130, 131; Education 171 and either 170, 172, or 175; and additional preparation in some area of science or mathematics. Courses from the Physics 10-20 sequence may be appropriate.

The course program of physics majors considering graduate work in the history of science should contain:

Physics 111A-B, 112A-B, and 130, 131; History 29A-B-C; 184, 185. Courses from the Physics 10-20 sequence may be appropriate.

GRADUATE PROGRAMS

The Department offers the M.A. and the Ph.D. degrees in physics, the first in recognition of demonstrated knowledge of the basic facts and theories of physics, the second primarily in recognition of demonstrated capacity for independent research.

All new graduate students take an entrance examination shortly before the beginning of the fall quarter. This examination is not "pass" or "not pass." It serves only to help the student and his advisor decide on the best program of study.

Complementing the formal courses, the Department offers regular colloquia and informal seminars. The graduate student is a member of an intellectual community and is expected to participate fully in these Department activities. In addition to the regular research seminars in solid state, high energy, and plasma physics, a teaching seminar meets once each week for the purpose of exploring techniques of instruction and improving graduate student teaching performances. This seminar introduces teaching assistants to the instructional program of this and related departments and gives students an opportunity by means of video-tape to observe and criticize their own teaching methods.

About 60 students of physics will be enrolled in 1972-73. Active programs of research are underway in high-energy physics, solid state physics, low temperature physics, plasma physics, mathematical physics, and astrophysics.

Sources of support available to graduate students include teaching assistantships, research assistantships, fellowships, and traineeships. For students admitted with financial aid, continuing support in later years is normal.

Students planning to pursue graduate work in physics should obtain a copy of the booklet *Physics* from the Physics Department.

Master of Arts in Physics

The requirements for the M.A. degree are: (1) three quarters of residence; and (2) mastery of graduate course material, which may be demonstrated either (2a) by passing, with an average grade of B or better, a *minimum* of nine graduate courses numbered between 200 and 259 and a written comprehensive examination, or (2b) by passing the Ph.D. qualifying examination. Under special circumstances, a research project and thesis may be accepted in lieu of proficiency in some of the graduate course material. There is no foreign language requirement for the M.A. degree.

A typical program in preparation for the written examination for the M.A. degree would consist of twelve courses:

211 (Class. Mech.)
213A-B (Elec. Th.)
212A-B (Math. Phys.)
214A-B (Stat. Phys.)
215A-B (Quant. Mech.)
Three electives chosen from 217A-B-C and 218A-B-C sequences, or undergraduate upper-division courses.

Doctor of Philosophy in Physics

The principal requirements for the Ph.D. degree are six quarters of residence, passage of a written and an oral examination, and successful completion and defense of a dissertation reporting results of original research. In addition, the Ph.D. candidate must complete moderate graduate course requirements. There is no foreign language requirement for the Ph.D. degree.

1. **Residence.** Up to three of the six required quarters of residence may be waived for students who have had graduate work at another institution.

2. **Course Requirements.** The student is required to exhibit mastery of the basic sequences, Mathematical Physics, Classical Mechanics and Electromagnetic Theory, Quantum Mechanics, Relativistic Quantum Mechanics, and Statistical Mechanics. In addition, nine graduate-level quarter courses, other than the basic sequences, and numbered less than 259, are required. These courses must be passed with an average grade of B or better.

3. **Qualifying Examination.** For advancement to Ph.D. candidacy, a student must pass a qualifying examination consisting of a written part and two oral parts. The written part covers a broad range of fundamentals of physics at the advanced undergraduate and graduate levels. The first part of the oral exam will be administered shortly after the written examination. All members of the first oral committee will be faculty from the Physics Department. The second part of the oral examination will be taken approximately one year after successful completion of the written exam and the first oral. The committee that administers the second oral examination will contain one or two faculty members from outside the Physics Department. The second oral will cover principally material related to the broad and general features of the student's thesis area. The written portion of the qualifying examination will generally be given once each year, in September, just prior to the start of classes. The examination may be taken by some students after one year of graduate study. A second attempt will be permitted if the first is not successful. A third attempt will be permitted only in extraordinary circumstances.

4. **Dissertation.** A dissertation summarizing the results of original research performed by the student under the supervision of a faculty member in the Department will be required for the Ph.D. degree. The criterion for the acceptability of a dissertation by the Department is that it be suitable for publication in a scientific

journal. The dissertation must not have been submitted to any other institution prior to its submission to the Physics Department at UCI.

5. **Defense of Dissertation.** Upon completion of the dissertation, the student will take an oral examination, open to the public, before his doctoral committee.

6. **Suggested Course Sequences.** Typical programs for the first two years designed to prepare the student for Ph.D. qualification and provide him with the foundation necessary for understanding and participating in modern research might include:

First Year:

211 (Classical Mechanics); 213A-B (Electromagnetic Theory); 212A-B-C (Mathematical Physics); 215A-B (Quantum Mechanics); 215C (Relativistic Quantum Mechanics).

In the second year of graduate study, the student may begin to take courses that will provide a broad background for his thesis area. The following sequences represent a typical second-year program:

For the student with an interest in solid state physics:

214A-B (Statistical Physics); 214C (Many Body Theory); 235A (Advanced Quantum Mechanics); 232A-B (Group Theory); 218A-B-C (Plasma Physics, Low Temperature Physics, Solids).

For the student with an interest in elementary particle physics:

235A-B (Advanced Quantum Mechanics); 232B (Group Theory); 217A-B-C (Elementary Particle Physics, Nuclei, Astrophysics); 214A-B (Statistical Physics); 214C (Many Body Theory) or 218C (Solids).

For the student with an interest in plasma physics:

214A-B (Statistical Physics); 214C (Many Body Theory); 217A-B-C (Elementary Particle Physics, Nuclei, Astrophysics); 218A-C (Plasmas, Solids); Elective.

PHYSICS FACULTY

Richard F. Wallis, Ph.D. Catholic University of America, *Professor of Physics and Chairman of the Department*

Myron Bander, Ph.D. Columbia University, *Associate Professor of Physics*

Gregory A. Benford, Ph.D. University of California, San Diego, *Assistant 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*

Herbert H. Chen, Ph.D. Princeton University, *Assistant Professor of Physics*

Paul E. Condon, Ph.D. Princeton University, *Associate Professor of Physics*

William R. Kropp, Ph.D. Case Institute of Technology, *Assistant Professor of Physics*

Mark A. Mandelkorn, Ph.D. University of California, Berkeley, *Assistant Professor of Physics*

Alexei A. Maradudin, Ph.D. University of Bristol, *Professor of Physics*

Meinhard E. Mayer, Ph.D. Parhon University (Rumania), *Professor of Physics and Mathematics*

Douglas L. Mills, Ph.D. University of California, Berkeley, *Associate Professor of Physics*
Michael M. Moe, Ph.D. Case Institute of Technology, *Assistant Professor of Physics*
William H. Parker, Ph.D. University of Pennsylvania, *Associate Professor of Physics and Vice Chairman of the Department*
John R. Pellam, Ph.D. Massachusetts Institute of Technology, *Professor of Physics*
Norman Rostoker, D.Sc. Carnegie Institute of Technology, *Professor of Physics*
Frederick Reines, Ph.D. New York University, *Professor of Physics and Dean of Physical Sciences*
Nathan Rynn, Ph.D. Stanford University, *Professor of Physics*
Jonas Schultz, Ph.D. Columbia University, *Professor of Physics*
Gordon L. Shaw, Ph.D. Cornell University, *Professor of Physics*
Dennis J. Silverman, Ph.D. Stanford University, *Assistant Professor of Physics*
Virginia L. Trimble, Ph.D. California Institute of Technology, *Assistant Professor of Physics*
Sukekatsu Ushioda, Ph.D. University of Pennsylvania, *Assistant Professor of Physics*
Gerard Van Hoven, Ph.D. Stanford University, *Assistant Professor of Physics*

LOWER-DIVISION COURSES IN PHYSICS

3A-B-C Basic Physics (1-1-1) F, W, S
Fall: Survey of physical theory; Newtonian mechanics. Winter: Electricity and magnetism; radiation and waves; optics; heat phenomena. Spring: Twentieth-century physics; relativity; quantum ideas; atomic and nuclear physics. Concurrent enrollment in Physics 3L is required each quarter. Prerequisite: Mathematics 2 (prior or concurrent).

3LA-B-C Basic Physics Laboratory (¼-¼-¼) F, W, S
Laboratory accompanying Physics 3. (Laboratory requirement of Physics 3 may be waived by consent of instructor for non-science majors.)

5A-B-C-D-E Fundamental Physics (1-1-1-1-1) W, S, F, W, S
Winter: Newtonian mechanics; facility in calculus is assumed, knowledge of computer programming is recommended. (Corequisite: Mathematics 2B.) Spring: Wave phenomena; relativity. (Corequisite: Mathematics 2C.) Fall: Electrostatics; magnetostatics; currents and fields; circuit elements; Maxwell's equations. (Prerequisite: Mathematics 2A-B-C.) Winter: Quantum theory; atoms and nuclei. (Corequisite: Mathematics 3B.) Spring: Statistical physics; thermal phenomena. (Prerequisite: Physics 5D.) Concurrent enrollment in Physics 5L is required each quarter.

5LA-B-C-D-E Fundamental Physics Laboratory (¼-¼-¼-¼-¼) W, S, F, W, S
Laboratory accompanying Physics 5. (Laboratory requirement of Physics 5 may be waived by consent of instructor for non-science majors.)

Physics Courses for Non-Majors

Courses numbered between 10 and 20 are especially designed for students majoring in programs other than the Physical Sciences.

11 Super-Cold (1) S
Lecture and demonstrations on superfluidity, superconductivity, and other phenomena near the absolute zero of temperature. Not offered in 1972-73.

12 Newton! (1) W
Origins of modern science in Newton's pioneering work in mechanics. Emphasis on historical, philosophical, and sociological developments. Directed toward students in humanities, social sciences, and fine arts. High school geometry required.

13 Physics of the Environment (1) W
Helps students understand the problems of the environment by emphasizing the physical

principles on which our technological society is based. Nuclear power, flow of energy in the environment, thermal and noise pollution, etc. Not offered in 1972-73.

14 Physics for the Artist (1) F
Physical phenomena through demonstrations, discussion, and individual experimentation. Laboratory-studio investigations of techniques for producing motion, light imagery, and physical interaction with the observer. Students must be willing and able to produce experimental works of art.

15 Cosmology – Man's Place in the Universe (1) F
The overall structure of the Universe and its changes in time; the evolution of galaxies, stars, and planets, the conditions necessary for life and possibilities for extra-terrestrial intelligent life.

16 Rainbows and Things (1) S
A variety of natural phenomena, some common, some less obvious, which have intrigued man for centuries. Among the subjects: rainbows, the setting sun, the planets, and the nucleus of atoms.

17 Physics through Science Fiction (1) S
Contemporary works of science fiction used to stimulate consideration of physics in many oft-used ideas about man's future. Cosmology, relativity, planetary physics, and speculative ideas as time travel and teleportation. High school physics or consent of instructor required.

18 Physics and Physicists in the Atomic Age (1) W
The famous physicists of the atomic age and their contributions to science. Discussion of the birth of modern physics in the 1920's and 30's; the impact of war on modern science; the conflicts, discrepancies, and personalities of modern physics.

19 Scientists and Social Responsibility (1) S
A non-technical discussion of the growth of 20th-century science in relation to human affairs.

UPPER-DIVISION COURSES IN PHYSICS

111A-B Classical Mechanics (1-1) F, W
Mechanics of particles through Lagrangian and Hamiltonian methods; rigid bodies; relativity; coupled systems. Prerequisite: Physics 5D or consent of instructor.

112A-B Electromagnetic Theory (1-1) S, F
Electrostatics; magnetostatics; properties of matter; Maxwell's equations; relativity; radiation; optics. Prerequisite: Physics 5C. Corequisite: Mathematics 3.

115 Statistical Physics (1) W
Microscopic theory of temperature, heat, and entropy; kinetic theory; multicomponent systems; quantum statistics. Prerequisites: Physics 5E, Mathematics 3C.

116 Thermodynamics (1) S
Macroscopic theory of temperature, heat, and entropy; mathematical relationships of thermodynamics; heat engines; phase transitions. Prerequisites: Physics 5E, Mathematics 3C.

130 Quantum Mechanics (1) F
Time-independent and time-dependent Schrödinger equation; one-dimensional problems; some theorems of quantum mechanics; central-field problem; Legendre functions. Prerequisites: Physics 5D, Mathematics 3C.

131 Atomic Physics (1) W
Early quantum results; black-body radiation; the hydrogen atom; atomic structure and atomic spectra; fine and hyperfine structure; Zeeman effect; transitions and selection rules. Prerequisite: Physics 130.

132 Nuclear Physics (1) S
Nucleons and nuclear structure; radioactivity; neutron-proton scattering; the deuteron; nuclear reactions. Prerequisite: Physics 130.

133 Solid State Physics (1) S
Phenomena of solids and their interpretation in terms of quantum theory. Prerequisites: Physics 5D-E.

135 Plasma Physics (1) F
Ionization and discharge mechanisms; microscopic motions and kinetic equations; macroscopic fluid theories; electrodynamics of plasma; wave propagation; examples of laboratory and cosmic phenomena. Prerequisites: Physics 5D-E. Not offered in 1972-73.

136 Elementary Particles (1) W
Experimental techniques and theoretical concepts of high-energy phenomena: accelerators and detectors; classification of particles and interactions of particle properties; symmetries and mass multiplets; production and decay mechanisms. Prerequisite: Physics 130. Not offered in 1972-73.

141 Modern Optics (1) S
Interaction of radiation with matter; lasers; non-linear optics; optical properties of solids; absorption and scattering of light; modern spectroscopic techniques. Prerequisites: Physics 112B and 130. Not offered in 1972-73.

144A Astrophysics: Stellar Structure and Evolution (1) W
Stars: their structure and evolution; physical state of the interior; the Hertzsprung-Russell classification; star formation; nuclear burning; giant and dwarf stars.

144B Astrophysics: Spectroscopy (1) S
Stellar spectra: observational and theoretical aspects. Radiative transfer and formation of spectral lines. Temperature, density, and composition of stars. Sunspots and solar activity. Spectra of nebulae and other dilute gases. Not offered in 1972-73.

145 High Energy Astrophysics (1)
Production of radiation by high energy particles. Evolution of galactic nuclei, radio galaxies, quasars, and pulsars. Cosmic rays and the cosmic background radiation. Not offered in 1972-73.

146 Galaxies and Cosmology (1) S
Structure and evolution of galaxies. General relativistic models of the universe. Observational tests of cosmological models. Early phases of the universe. Unconventional cosmologies.

150 Electronics (1) F
Applications of modern semiconductor devices to physical instrumentation. Characteristics of semiconductor devices, integrated circuits, analog and digital circuits. Lecture and laboratory. Prerequisite: Physics 5E or consent of instructor.

151-152-153 Advanced Laboratory I, II, III (1-1-1) F, W, S
Experiments in atomic, nuclear, and solid state physics. Zeeman effect, electron spin resonance, nuclear magnetic resonance, optical spectroscopy, and x-ray diffraction. Prerequisites: Physics 5D-E or consent of instructor. Physics 130-131-132 recommended.

160 Group Theory for Physical Science Students (1) S
Abstract group theory and group representations. Emphasis will be on the application of symmetry principles to understand various physical phenomena taken from mechanics, atomic spectroscopy, solid state and molecular physics.

161A-B-C Mathematical Methods for Physicists (1-1-1) F, W, S
This course provides the mathematical tools for upper-division physics courses. Topics to be treated include ordinary and partial differential equations, special functions, boundary value problems, Fourier and Laplace transforms, linear algebra and tensor analysis, and complex functions. Application of mathematical methods to physical problems will be stressed. Prerequisites: Mathematics 3A-B-C, 140A-B-C, or equivalent.

190 Contemporary Ideas in Physics (1) F
Intensive exploration of some contemporary ideas in physics, with the specific topics to be determined by the interests of the enrolled students. Open to lower-division students with consent of instructor.

195 Undergraduate Research (1)
Open to seniors and occasionally to juniors with consent of Department.

199 Readings on Special Topics (1)
With consent of Department.

GRADUATE COURSES IN PHYSICS

211 Classical Mechanics (1) F
Variational principles, Lagrange's equations; applications to two body problems, small oscillation theory and other phenomena. Hamilton's equation, Hamilton-Jacobi theory.

212A-B-C Mathematical Physics (1-1-1) F, W, S
Ordinary differential and partial differential equations; complex variables and special functions; matrices, eigenvalues and eigenvectors; numerical methods; perturbation theory; integral equations; calculus of variations, elements of group theory.

213A-B Electromagnetic Theory (1-1) W, S
Electrostatics; magnetostatics; relativity; classical electron theory; fields in vacuum and matter; retardation; radiation and absorption; dispersion; propagation of light; diffraction; geometric optics; theories of the electric and magnetic properties of materials; scattering.

214A-B Statistical Physics (1-1) F, W
Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics; ensemble theory, ideal and imperfect gases; thermodynamic properties of solids; cooperative phenomena; phase transitions of first and second order; fluctuations.

214C Many Body Theory (1) S
The Green's function approach to the theory of many body systems at finite temperatures will be discussed. The techniques of diagrammatic perturbation theory will be introduced and applied to a few specific problems to illustrate the methods.

215A-B Quantum Mechanics (1-1) F, W
Foundations of quantum theory; Dirac notation, basic operators and their eigenstates; perturbation theory; variational method; spin; Clebsch-Gordon coefficients; structure of atomic systems; scattering theory; formal collision theory; semi-classical radiation theory.

215C Relativistic Quantum Mechanics (1) S
Quantization of the electromagnetic field, relativistic quantum mechanics, second quantization of many body systems.

217A Particles (1) S
An advanced survey of high energy phenomenology. Elementary particle quantum numbers, isotopic and unitary spin multiplets, symmetries (e.g., parity, charge conjugation, and time reversal), S-matrix, production and decay mechanisms, and current trends in theory.

217B Nuclei (1) W
Topics will be selected from: the two-body problem, low energy nucleon-nucleon scattering, structure of light nuclei, nuclear reactions and resonances, models of complex nuclei, theories of the fission process, nuclear shapes and deformations, and alpha, beta, and gamma emission processes. Not offered in 1972-73.

217C Astrophysics (1) S
Stellar structure and evolution; formation of the elements; supernova; pulsars; quasars; origin of cosmic rays. Not offered in 1972-73.

218A Plasma Physics (1) F
Orbit theory, hydromagnetics, plasma waves, applications to astrophysics and controlled fusion.

218B Low Temperature Physics (1) W
Possible topics include: properties of superfluid helium, and phenomenological theories of superfluid helium, phenomenology of the superconduction state, discussion of experimental methods in low temperature physics. Not offered in 1972-73.

218C Solids (1) W
Possible topics include: crystal properties, lattice dynamics of solids, electronic band structure of solids, theories of metals and semiconductors, magnetism and superconductivity, with special emphasis on elementary excitations in solids.

232A-B Applications of Group Theory (1-1) W, S
The role of symmetry in physical problems. First quarter, finite groups; second quarter,

continuous groups. 232B can be taken without 232A. Abstract group theory and theory of group representations. Perturbation theory, selection rules, crystal tensors, molecular vibrations, Jahn-Teller theorem, directed valence, time reversal symmetry, double groups, crystal field splittings of atomic levels. Continuous groups and particle physics. Full rotation group, Clebsch-Gordan coefficients, the Wigner-Eckart theorem, Racah coefficients, the Lorentz group, unitary groups. Not offered in 1972-73.

235A-B Advanced Quantum Mechanics (1-1) F, W
Fall: Lagrangian formalism, second quantization, interacting fields, perturbation theory. Winter: Feynman graph techniques, renormalization, symmetries, PCT theorem, connection between spin and statistics.

237A-B-C Elementary Particle Theory (1-1-1) F, W, S
Not offered in 1972-73.

238A-B-C Solid State Theory (1-1-1) F, W, S
Bonding in solids; crystal symmetry and group theory; elastic properties of crystals; lattice vibrations, interaction of radiation with matter; cohesion of solids; the electron gas; electron energy bands in solids; ferromagnetism; transport theory; semiconductors and superconductors; many-body perturbation theory.

239A-B-C Plasma Physics (1-1-1) F, W, S
The properties of plasmas, with major emphasis on fully ionized gases. Introduction to modern theoretical treatments. Applications to problems such as controlled thermonuclear fusion, propulsion, energy conversion, and the space sciences.

Special Topics in Physics (260-279)

These courses are designed to acquaint students with the basic concepts and methods underlying current research activity in selected branches of physics.

260A-B-C Topics in Solid State Physics (1-1-1) F, W, S
Seminar designed to acquaint students with recent advances in solid state physics. Lectures from the Physics Department (both faculty and graduate students), other UCI departments, and other institutions. May be repeated. Prerequisite: consent of instructor.

261A-B-C Advanced Plasma Seminar (1-1-1) F, W, S
Advanced topics in plasma physics: wave propagation, nonlinear effects, kinetic theory and turbulence, stability problems transport coefficients, containment. Applications to controlled fusion and 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
Not offered in 1972-73.

263A-B-C High Energy Seminar (1-1-1) F, W, S
Discussion of advanced topics and reports of current research results in theoretical and experimental high energy physics. May be repeated for credit. Prerequisite: consent of instructor.

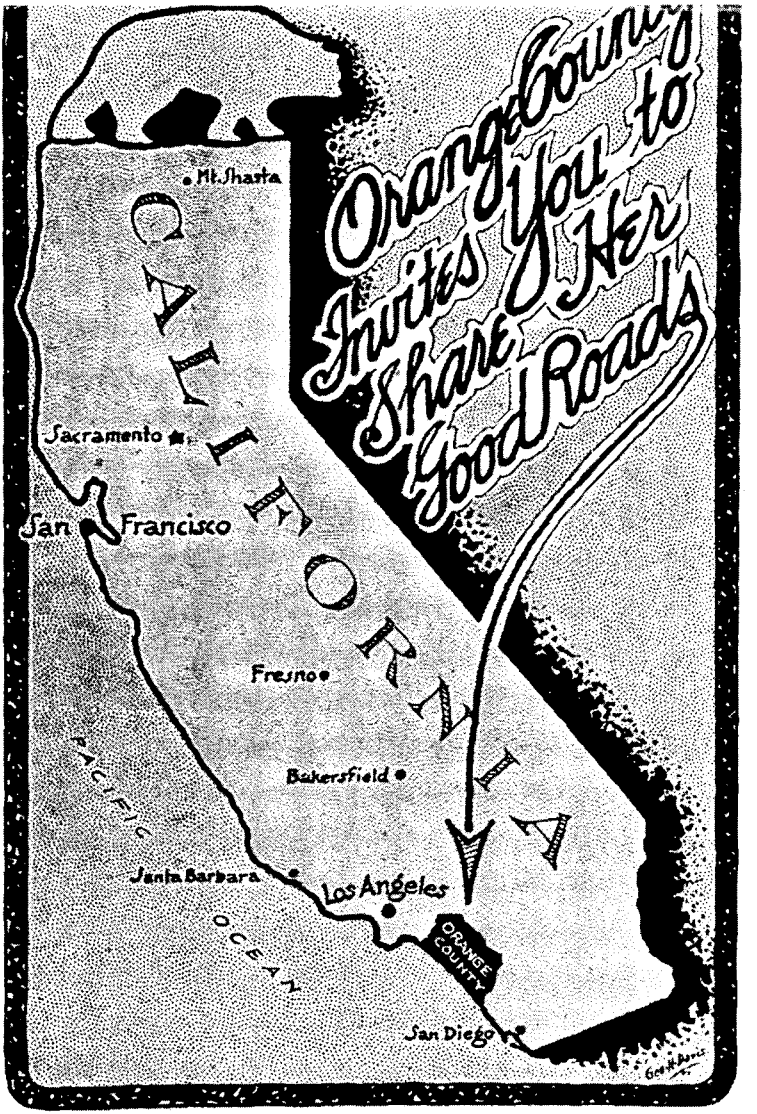
266A-B-C Advanced Mathematical Methods (1-1-1) F, W, S
Beyond the standard subjects now taught to physicists, introducing future theorists to the language and methods of post-1950 mathematics. Prerequisites are the standard Mathematical Physics courses and a willingness to participate actively. Not offered in 1972-73.

267A-B-C Current Problems in High Energy Physics (1-1-1) F, W, S
Study of current problems in experimental and theoretical high energy physics. Lectures mainly given by students. Course can repeatedly be taken for credit. Prerequisite: consent of instructor.

295 Experimental Research (1 to 3)
With the approval of a faculty member a student may pursue a research program in experimental physics. Typical areas include: low temperature physics, plasma physics, spectroscopy, solid state physics, and elementary particle physics.

296 Theoretical Research (1 to 3)
With the approval of a faculty member a student may pursue a research program in theoretical physics. Typical areas include: solid state physics, low temperature physics, plasma physics, and elementary particle physics.

299 Reading of Special Topics (1)
With special consent from a faculty member who will agree to supervise his program, a student may receive course credit for individual study of some area of physics.



Map of Orange County, 1916.

SCHOOL OF SOCIAL SCIENCES

Lewis A. Froman, Jr.
Dean

Undergraduate and graduate education in the School of Social Sciences at UCI involve participation in an experiment. The School includes the traditional subject areas of anthropology, economics, geography, political science, psychology, and sociology. However, the program, faculty, and students differ substantially from conventional counterparts elsewhere. The specific details of the differences are indicated below. The details are elaborations of a commitment on the part of the faculty and students to a modern social science. This commitment leads to educational programs with a triple emphasis.

First, they are built upon systematic empirical observation and quantitative analysis of human behavior. Thus, social science students must become familiar with the mathematical, computational, and statistical tools underlying modern social science. The availability of high-speed electronic computers, the development of mathematics oriented toward the problems of the social sciences, and the refinement of techniques for sampling, observing, and modifying human behavior have contributed major new elements to social science.

Second, many of the most interesting questions in the study of human behavior cannot be fixed within the traditional disciplinary boundaries of anthropology, economics, geography, political science, psychology, and sociology. Some of the new and evolving areas which cross these orthodox disciplinary boundaries are political economy, geo-psychology, ethno-sociology, and psycholinguistics.

Third, important new problems confront society; and social scientists have a responsibility to help solve these problems. A rapidly changing technology, population explosion, urban concentration, the thrust of once underdeveloped societies, the strains of race relations, and the combined efforts of men and machines in problem solving are only a few of the problems which confront today's social scientists.

To confront these and other contemporary problems, training in the social sciences must emphasize the basic analytical tools and the processes by which knowledge of human behavior is gained. Such training must also emphasize the exploration of the relations among the social sciences and between the social sciences and other disciplines.

At UCI, education in the social sciences is built upon the assumption that students play an active role in the entire educational process. To facilitate education, various resources are provided — students, faculty, courses, programmed instruction, library, community, lectures, seminars, laboratories, 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 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 23 under University Requirements.) The normal program for majors in the School satisfies *part* of the breadth requirement (six courses in the School of Physical Sciences) through the School's mathematics requirement.

B. Familiarity with the mathematical, computational, and statistical tools underlying modern social science. Normally, this requirement is met by passing six courses in mathematics (Mathematics 5A-B-C, 6A-B-C); one course in computer science (Information and Computer Science 1); and two courses in advanced mathematics, statistics, or mathematical social science. Students who wish to do so may substitute Mathematics 2A-B-C, 3A-B-C for the first six courses in mathematics, provided they subsequently complete at least two quarters of work in probability and statistics. See the section on "Mathematics and Social Science" below.

C. An understanding of the fundamental concepts, analytical tools, and methods of social science. Normally, this requirement is met by taking Social Science 1 (a

one-quarter course) and two other courses in social science numbered with *one-digit* course numbers.

D. An understanding of important advanced areas in social science. Normally, the requirement is met by passing satisfactorily six upper-division courses in the School of Social Sciences.

E. Satisfactory completion of a senior project. The senior project is an individually designed year-long educational program approved for the individual student by a faculty member. Normally, it is a three-course program.

A student who has qualified for a Bachelor's Degree in Social Sciences and wishes to receive a Social Sciences B.A. Degree with a concentration in one of the subfields (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 23.

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 re-

quirements for the social science curriculum. Students anticipating transfer to UCI in their junior year, however, should attempt to plan their program so as to anticipate the special requirements of the program. Every effort will be made to accommodate individual variation in background, provided the student is prepared to commit himself to intensive work in areas of deficiency. Normally, the typical two-year program is simply the last two years of the regular four-year program, except that students who have not satisfied the freshman and sophomore mathematics requirements in the School must do so before graduation (see the section on "Mathematics and Social Science" below).

Seniors: Students wishing to graduate with a degree in the School by transferring in their senior year should plan their work carefully to ensure that the requirements can be met in *one year of residence.* In general, differences between the program at UCI and programs elsewhere *make such transfers difficult.*

Mathematics and Social Science

Competence in basic mathematics is a necessary skill for a modern social scientist. All students are expected to have competence in intermediate algebra on entrance.

The requirements stem from the nature of modern social science. To an increasing extent, the concepts and terms of mathematics, statistics, and computers are an important part of the social scientist's vocabulary. Basic knowledge of these tools is necessary to an understanding of current literature in these fields, to the analysis of data, and to an intelligent use of models in social science.

Each candidate for a degree in the School of Social Sciences is expected to have knowledge of probability theory, matrix algebra, calculus, difference and differential equations, mathematical statistics, and computing. Normally, this knowledge is gained by pursuing a program of nine courses in mathematics, statistics, computing, and mathematical social science. The first seven courses normally are: Mathematics 5A: Finite Probability; Mathematics 5B: Differential and Integral Calculus; Mathematics 5C: Continuous Probability; Mathematics 6A: Linear Algebra; Mathematics 6B: Differential Equations; Mathematics 6C: Numerical Methods; Information and Computer Science 1: Digital Computing.

To complete the requirement, a student normally chooses two courses from an approved list of courses in mathematics, computing, or mathematical social science.

Students who wish to do so may substitute the knowledge represented by Mathematics 2A-B-C and 3A-B-C for Mathematics 5A-B-C and 6A-B-C. However, they will then be expected to complete at least two quarters of work in probability and statistics.

Students entering as juniors (or graduate students) without previous college mathematics are normally enrolled in Mathematics 5A-B-C and Information and Computer Science 1 during their first year at UCI. Such students ordinarily enroll in Mathematics 6A-B-C and the two additional courses during their second year. An undergraduate transfer student without previous college mathematics will normally need two regular school years of work at UCI to complete the graduation requirement of the School.

GRADUATE PROGRAMS

The School offers instruction leading to the Ph.D. degree. The degree programs are restricted to full-time students and emphasize preparation for research and academic careers in the disciplines involved.

In recent years it has become increasingly clear that the traditional boundaries among anthropology, economics, geography, political science, psychology, and sociology are not always the most convenient boundaries for the research and teaching undertaken by social scientists. For instance, those social scientists focusing on such problems as organizations, choice, conflict, urban affairs, or public policy analysis are likely to find such boundaries irrelevant. This problem has long been signalled by the existence at major universities of such dual-title graduate programs as those in political economy and social psychology. There would seem to be no purpose, however, in multiplying and recombining these titles endlessly. Therefore, the School concentrates its graduate training in a program leading to the Ph.D. in Social Sciences. This program does not pretend that there is a single fixed body of knowledge that all social scientists must master, nor will it serve as a cover for any particular methodological orthodoxy. Rather, it is designed to allow each graduate student to work out for himself, in close conjunction with at least three members of the faculty, a course of study resulting in the mastery of a coherent body of empirical and theoretical knowledge which can serve as the basis for further creative and fruitful teaching and research. Depending on the student's interests, such a program may range quite widely across disciplines or resemble the traditional one discipline plus outside field type of arrangement found at most universities. The faculty envisions a student's Ph.D. program to be of approximately three to four years duration. The student will devote the first year to the explorations and preparation necessary to defining and mastering a coherent field of study. He will continue this preparation into the second year, during the course of which he will also submit a dissertation proposal. The third year will normally be devoted to dissertation research and writing. In some instances, of course, pre-dissertation work will require more than two years, and especially those dissertations demanding extensive field research may require more than one year to complete. In addition, all students will be expected to acquire mathematical and language tools appropriate to their studies. Teaching experience is required of all graduate students for the Ph.D. The requirement is normally fulfilled by the equivalent of 50 per cent time as a Teaching Assistant for one academic year.

Requirements for the Doctor of Philosophy in Social Sciences

1. 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.

2. 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.

3. 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.

4. 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.

5. Dissertation as described above under general discussion of the School's Graduate Programs.

Requirements for the Doctor of Philosophy in Psychology

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:

1. Familiarity and research competence in three broadly defined areas of research. These areas may be selected from among several core research courses offered throughout the year. The core courses emphasize study and practice of the methods of data analysis and the research techniques used in each area. Core offerings in the standard areas such as perception, cognition, learning, sociality, and personality will be offered as well as courses in new areas defined by the special interests and competencies of the faculty. The first-year graduate student, to increase the breadth of this exposure to different methods and approaches, is encouraged to select his core courses so that there is no overlap among the instructors teaching the courses.
2. 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 leads 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

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*

Joel D. Barkan, Ph.D. University of California, Los Angeles, *Assistant Professor of Political Science*

William H. Batchelder, Ph.D. Stanford University, *Associate Professor of Psychology*

Henry Beck, Ph.D. Stanford University, *Assistant Professor of Political Science*

Duran Bell, Ph.D. University of California, Berkeley, *Associate Professor of Economics* (on leave)

Arnold Binder, Ph.D. Stanford University, *Professor of Psychology and Director of th Program in Social Ecology*

Isabel M. Birnbaum, Ph.D. University of California, Berkeley, *Associate 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, Ph.D. University of Michigan, *Assistant Professor of Social Science and Information and Computer Science*

Michael L. Burton, Ph.D. Stanford University, *Assistant Professor of Anthropology*

Michael Butler, M.A. Harvard University, *Assistant Professor of Social Science*

Carlos Castenada, Ph.D. University of California, Los Angeles, *Lecturer in Social Science*

Douglas K. Chalmers, Ph.D. State University of Iowa, *Assistant Professor of Psycholinguistics*

Benjamin N. Colby, Ph.D. Johns Hopkins University, *Professor of Anthropology*

Peter W. Culicover, Ph.D. Massachusetts Institute of Technology, *Assistant Professor of Social Science*

Richard L. Degerman, Ph.D. Johns Hopkins University, *Assistant Professor of Psychology*

Jacqueline M. Desbarats, Ph.D. University of Bordeaux, *Lecturer in Social Science*

Robert Dubin, Ph.D. University of Chicago, *Professor of Sociology and Administration*

Raul A. Fernandez, Ph.D. Claremont Graduate School, *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)

Lewis A. Froman, Jr., Ph.D. Northwestern University, *Professor of Social Science, Dean of the School of Social Sciences*

Harold Garfinkel, Ph.D. Harvard University, *Professor of Sociology*

Gordon G. Globus, M.D. Tufts University, *Associate Professor of Psychiatry and Human Behavior*

Louis Gottschalk, M.D. Washington University, *Professor of Psychiatry and Human Behavior, Social Ecology, and Social Science*

Henry Hamburger, Ph.D. University of Michigan, *Assistant Professor of Mathematical and Computer Models*

Joseph T. Hart, Ph.D. Stanford University, *Associate Professor of Psychology*
Sheen T. Kassouf, Ph.D. Columbia University, *Associate Professor of Economics*
Mary Key, Ph.D. University of Texas, *Associate Professor of English and Social Science*
Jerome Kirk, Ph.D. Johns Hopkins University, *Assistant Professor of Sociology and Anthropology*
Charles Lave, Ph.D. Stanford University, *Assistant Professor of Economics*
Jean C. Lave, Ph.D. Harvard University, *Assistant Professor of Anthropology*
Craig MacAndrew, Ph.D. University of Chicago, *Associate Professor of Psychology*
Fred McGuire, M.D. New York University, *Associate Professor of Medical Psychology, Psychiatry and Human Behavior*
Duane Metzger, Ph.D. University of Chicago, *Associate Professor of Anthropology*
Louis Narens, Ph.D. University of California, Los Angeles, *Assistant Professor of Social Science*
Robert Newcomb, Ph.D. University of California, Santa Barbara, *Lecturer in Social Science*
M. Ross Quillian, Ph.D. Carnegie-Mellon University, *Associate Professor of Social Science*
A. Kimball Romney, Ph.D. Harvard University, *Professor of Anthropology*
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*
Volney Stefflre, M.A. Harvard University, *Associate Professor In-Residence of Psychology and Anthropology*
David Sudnow, Ph.D. University of California, Berkeley, *Associate Professor of Sociology*
Rein Taagepera, Ph.D. Delaware University, *Assistant Professor of Political Science*
Judith Tendler, Ph.D. Columbia University, *Assistant Professor of Economics*
John Wallace, Ph.D. Northwestern University, *Associate Professor of Psychology and Administration*
William Watt, Ph.D. University of Pennsylvania, *Associate Professor of Linguistics*
Christian Werner, Ph.D. Free University of Berlin, *Associate Professor of Geography*
Kenneth Wexler, Ph.D. Stanford University, *Assistant Professor of Psychology*
Eleanor Wynne, M.A. University of Washington, M.A. University of Oklahoma, *Lecturer in Social Science and Director of Laboratory Preschool*
John Yellott, Ph.D. Stanford University, *Professor of Psychology*

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 1972-73. At the *beginning* of each quarter (during registration week) a final, complete listing of the courses offered will be available at the Office of the Dean, Room 627, Social Science Tower.

1U Introduction to Analysis (1)
A basic introduction to the models and tools of analysis of social science.

4U Introduction to the Study of Language (1)
Current insights into the nature of language; language-use and language-change; language and culture; relationships among languages; thinking; writing systems; social and geographical dialects; related topics.

6R Freshman Seminar in Experimental Psychology (1)
An intensive course designed for students who are considering a research career in the social sciences, particularly psychology. Topics drawn from laboratory studies and physiological psychology, focusing on such questions as, "How are hypotheses developed and tested in the behavioral sciences?", and "What problems arise in designing experiments and in collecting and interpreting data?"

7U Introduction to Sampling (1)
Introduction to theory and methods of poll sampling, with emphasis on sampling error. Sampling errors in simple experiments.

8N Introduction to Theorizing about Politics (1)
What is politics? Is man basically a political animal? How important is politics to the average individual? What are the theoretical bases of "democracy," "communism," and "fascism?"

10D Introduction to Anthropology (1)
An introductory course in anthropology with special focus on cultural anthropology.

10G Introduction to Economics (1)
An application of economic analysis to current issues.

10N Introduction to Political Science (1)
A basic introduction to political science.

10R Introduction to Psychology (1)
Readings in a basic introductory textbook are supplemented by lectures on selected topics, e.g., Experimental Methods, Developmental Psychology, Attitude Formation, and Language Development.

10X Introduction to Sociology (1)
An introduction to sociology and social psychology.

11N Inexact Quantitative Methods (1)
How many piano tuners in New York? You will discover that you do know it, with a much smaller error than you thought possible. This is a course on how to make the most out of imperfect data and/or a limited knowledge of mathematics. Simplifying approximate calculations, estimates of magnitudes, and detection of logical-quantitative errors are applied to problems from real life and political science literature.

103U Applied Group Theory (1)
The mathematical theory of groups will be applied to such diverse areas as kinship systems, pattern recognition (Gestalten), social decision making, the enumeration of structures, and Piaget's theory of child development. This algebraic theory has proven useful in describing the symmetries and invariants of a wide variety of systems of behavior.

106D Cultural Ecology (1)
An examination of theories which assert that human cultures are partially determined by the need to survive within the limits of the natural environment.

107N Society and Politics in France and Britain (1)
This course will study the nature of society and politics in Britain and France. We will examine the relationship between these two spheres in general as well as in reference to specific events – e.g., the May Crisis of 1968 in France.

109U Rational Decision Making in Two Choice Situations (1)
An analysis of rational choice behavior primarily illustrated with examples from alternative investments. Types of investments considered include: stocks, bonds, options (puts and calls); real estate, syndications, "lease backs."

111RST Experimental Psychology (1-1-1) F, W, S
A three-quarter course on the design of experiments and the analysis of results obtained in psychology experiments. Experiments will be conducted in laboratory sections.

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.

120U Structural Models of Behavior (1)
Introduction to some numerical techniques which attempt to describe the structure inherent in multivariate data. Topics to be covered are: information theory, graph theory, cluster analysis, discriminant analysis. Psychological applications of the techniques will also be discussed.

126R Psychology of Decisions (1)
This course will attempt to describe and explain actual decision behavior. Both mathematical and computer-based models will be explored. Topics covered will include subjective probability, utility, transitivity, expectations, Bayes' theorem, regression, and risk dimension preferences.

130R Visual Experience (1)
Potential topics: visual acuity, color vision, memory and after images, visual reaction time, depth perception, adaptation to distortion of visual input. Demonstrations and miniature experiments will be emphasized.

131D The Ixil Maya (1)
The religion and life of the modern day Ixil Maya of highland Guatemala with archeological and historical background included. A self-instructional course using slides, tapes, films, and a programmed text.

132U Conversation I (1)
Research results of, and techniques for, the study of interactional details in natural conversation. Focus on methods used for organizing the sequencing of speakers of conversation, e.g., question/answer sequences, joking.

134K Transportation Theory (1)
Advanced topics in transportation system analysis and planning: land use and traffic generation – traffic flow and network theory – transportation impact and policy. Emphasis will be on theoretical approaches and mathematical models.

134N African Politics (1)
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.

138R Cognition and Language Development (1)
The time table for language acquisition in children is stable over numerous languages. Employing the theories of Piaget and other developmental psychologists, we will approach the processes of language acquisition from a primarily non-linguistical point of view. Cognitive prerequisites for the proper use of linguistical components will be approached in terms of a role structure analysis of language.

141D Kinship and Social Organization (1)
The organization of social life, primarily in preindustrial societies. Theories of kinship, marriage regulations, and social roles. Comparisons of psychological, sociological, and economic explanations of social organization.

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.

147R The Psychology of Awareness (1)
An examination of neurotic changes in consciousness from the perspective of primal therapy. Primal therapy will be compared to SR traditional and modern therapies and to meditation.

151K Natural and Man-Made Networks (1)
Lecture and seminar, emphasizing the mathematical structure of network phenomena. Will construct models of network development and operation and test them against empirical examples: highways, subways, pipelines, rivers, etc.

159UV An Introduction to Freud and the Neo-Freudians (1-1)
Two-quarter course. The first quarter will be devoted exclusively to Freud. The works of a selected group of theorists who have come after Freud will be introduced and subjected to critical analysis during the second quarter.

161R Models of the Brain (1)
Introduction to brain models which are physiologically plausible, which explain perceptual and learning behavior, and which are precise enough for computer simulation.

165R Games (1)
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.

173U Phonological Theory and Generative Dialectology (1)
Topics in advanced phonological theory; dialectology; sociolinguistics; notational conventions; rule application, etc.

183R Concept of Rules (1)
The concept of rules has the same status in social science as does the concept of law in the natural sciences. This assumption will initiate readings and discussions 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.

184U Behavior of Children I (1)
A laboratory/lecture course on the growth and development of children ages 2-7 yrs. Main focus on observing, recording, and understanding the ordinary behavior of children in group situations, and on the theory of culture acquisition.

189X Work in Modern Society (1)
Work as a productive activity in society; the person as a member of work organizations; work and personal life history.

GRADUATE COURSES IN SOCIAL SCIENCES

210R Visual Information Processing (1)
Topics in current vision research, e.g., short term visual storage, eye movements, temporal image development, adaptation, perceptual anomalies.

232R Seminar in Abnormal Psychology (1)
This course goes beyond the mere description of abnormal behavior to include problems in research design and an introduction to the various scientific, social, and political controversies existing in the field of mental health.

250U Theories of Behavioral Deviations (1)
A laboratory/lecture course to survey concepts, theories, and approaches regarding behavioral deviations. Field placements at Fairview State Hospital.

280R Computer-Based Models of Behavior (1) F
Computer simulation will be explored as a means of studying human information processing. Models of theorem proving, verbal learning, decision making, concept formation, and problem solving will be explored.

280U Computer Simulation Models and Methods for the Social Sciences (1) W
An investigation of the current developments in simulation with applications on the UC Santa Barbara Culler-Fried system.

280X Theory Building (1)
A non-mathematical examination of the components of theory and rules for their combination into scientific models; research as (1) source of theory components, and (2) test of predictions made from a model.

281K-L-M Spatial Perception and Mental Maps (1-1-1)
This seminar will concentrate on the general topic of spatial perception and related mental maps. The term "spatial" will specifically refer to geographic areas such as neighborhoods, communities, "landscapes" (rural or urban), and regions. Primary focus of seminar's topic: identification and comparative analysis of mental maps formed by people as products of their perception of these areas (and related interests).

281R Dreams, Myths, and Dream Interpretation (1)
This course will consider Senoi, Freudian, and Jungian methods of dream interpretation.

281U Language and Behavior for Graduate Students (1)
Review of experimental and descriptive techniques and study of relations between languages and thought and/or language and behavior.

284R Experimental Design I (1)
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.

288R Research in Verbal Learning (1) W
An intensive study of current research in selected areas of verbal learning. Topics stem from areas such as free-recall learning, organization in learning and memory, and the role of interference in forgetting.

INTERSCHOOL CURRICULA

These programs grant degrees but are not under any of the regular schools at UCI. They are independent programs and are not interrelated in any way. There are no "school requirements" for the Bachelor's Degree in any of the Interschool Curricula programs; the requirements for a degree are specified by each program as described below.

PROGRAM IN COMPARATIVE CULTURE

"Culture" may be defined as that complex whole of knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society. "Culture" refers to the distinctive ways of life of a "society," a group of people who have learned to work together. Society is made up of individuals; culture is made of what happens in their consciousness, in their emotions, and in their habits of behavior. The crucial changes taking place in "society" very often first take place in "culture," which lies behind society in providing its motives and methods.

Recently, a rebellion against departmentalized knowledge has been one of the most remarkable developments in American universities. The possibilities of cooperation between disciplines have been tested and developed in many areas. The study of culture has in common with the development of collaborative study in other areas the conviction that interdisciplinary investigation is essential. We who study culture comparatively believe, first, that a particular civilization or culture, with all its diversity, has a certain underlying homogeneity which can serve as a unifying key to the interpretation of diverse phenomena within this particular culture; and, second, that intercultural or cross-cultural study of cultures illuminates both the peculiarities of any culture and also the connections between cultures.

The major in Comparative Culture is elected by students planning careers requiring a knowledge and understanding of peoples and cultures. Apart from affording an opportunity to secure an elementary or secondary teaching credential, in cooperation with the Office of Teacher Education, the major prepares students for community service at all levels – local, state, national, and international. Graduates of the Program can look forward to pursuing any career requiring direct or indirect human interaction, and should give efficient performance following the normally prescribed period of on-the-job training. The Program also prepares students for entry into graduate and professional schools whose requirements consist essentially of a sound background in socio-cultural studies.

The student in Comparative Culture is given an opportunity for consistent interaction with peoples and ideas different from those to which he has been accustomed. Not only do most of the courses reflect an awareness of, and interest in, the ethnic groups comprising the United States and the Third World, but the participants – faculty, staff, and students – include representatives of these groups as well. To study Comparative Culture, therefore, is to experience life as it has evolved among different manners of human beings, and to participate in a universal community in microcosm. The opportunity for a sustained global perception is further enhanced by the fact that students may qualify (at the end of the sophomore year) for study in foreign universities under the University of California Education Abroad Program, with centers in Africa, Asia, Europe, and Latin America.

Through the Program's student associations, representatives are elected to serve on the Council of Scholars. These student representatives serve, along with elected representatives of the faculty, on the Standing Committees (Executive, Graduate, and Undergraduate) which make regular reports at the bi-weekly meetings of the Council of Scholars. This council is the deliberative and decision-making body for all policy matters affecting curriculum, recruiting, personnel, and resources.

Degrees Offered

Comparative Culture ..... B.A., Ph.D.

The Program takes pride in granting both Intradepartmental Honors and Graduate Honors. Twelve per cent of graduates may receive honors at graduation: one per cent *summa cum laude*, three per cent *magna cum laude*, and eight per cent *cum laude*. The criteria for honors at graduation include a minimum grade point average of 3.5 on work completed at UCI, degree of service to the Program, and degree of service to the University and/or community. Consideration is also given for outstanding achievements in research projects. The Program has an Annual Awards Banquet at the end of the spring quarter for honoring the graduating recipients of the following awards: The Gunter & Elizabeth Herman Award, The Doctor Johnson Women Studies Award, The Maureen Goldston Award, The Orange County Grand Jury Award, and The Program Director's Award.

UNDERGRADUATE PROGRAM

Requirements for the Bachelor's Degree in Comparative Culture

The Program is obliged to help fulfill the spirit of the breadth requirement which is intended to expose students to learning skills and content different from the chosen major. To this end, the Comparative Culture major is required to take 48 units, upon advisement, outside the Program. A student may choose courses offered in any school or program, subject to the approval of the Academic Advisor of Comparative Culture. Students should plan to earn at least 12 of these units in courses focusing on mathematics, logic, computer science, and other methodological and natural (non-normative) sciences. All majors (except for transfer students who may be granted waivers for courses where appropriate) must satisfactorily complete: Comparative Culture 1A-B and at least two Comparative Culture 10 courses by the end of the sophomore year; 48 units outside the Program to satisfy the spirit of the breadth requirement; 24 units in language or equivalent courses; 48 units within Comparative Culture along the line of either Plan A (ethnic/cultural studies), Plan B (disciplinary or interdisciplinary methodologies), or Plan C (contract specifying an individualized curriculum).

GRADUATE PROGRAM

The Ph.D. program emphasizes work centering on the cultures of the United States of America, including the dominant and minority cultures and their antecedents in time and space. The program is designed to meet the following central objectives: to train interdisciplinary intellectuals — teachers and research scholars — who can deal comparatively with the range of cultures found in the United States of America; to equip graduate students for positions in colleges and universities in interdisciplinary programs, as well as in programs involving English, history, humanities, and social sciences; to prepare top-level personnel for public and private agencies requiring experts in socio-cultural affairs and operations. The Program pursues these objectives by focusing on resources (faculty, courses, colloquia, and special projects) that enable students to emphasize either literature and the arts or history and the social sciences. These basic patterns permit concentration in comparative ethnic-cultural analysis (such as African, Asian, Black, Chicano, and/or Latin American), as well as combinations of academic or professional interest within and across the two main emphases.

Requirements for the Ph.D. Degree in Comparative Culture

Admission. Requirements and standards for admission into the Program are in keeping with those of the University of California as a whole. Students with at least a B.A. degree will be considered for admission on the basis of past academic performance and present academic interests.

Residency. The university residence requirement for the Ph.D. is six quarters, the student being expected to enroll in at least one course during each of these quarters. Students entering with an M.A. degree may receive up to three quarters course credit for previous work. The Graduate Committee of the Program in Comparative Culture will consider requests in writing for a waiver of the residence requirement and for up to nine courses involving previous work of relevance to the Ph.D. requirements.

Required and Elective Courses. Each first-year student, except where a waiver has been granted, will take core course #1, American Culture 200A-B-C, Theory and Methods in the Interdisciplinary Study of American Cultures, and core course #2, Comparative Culture 200A-B-C, Scope and Methods of Ethnic and Third World Studies. In addition, each student may enroll in three elective courses offered within the Program or in some other related department. All elective courses must be approved by the student's academic advisor. During the second year, the student will take two two-quarter research seminars (equivalent of four courses), preferably but not necessarily after completion of the two required core courses. The student may take up to five additional elective courses offered within or outside the Program in Comparative Culture.

Comprehensive Examination. A written examination is given at the end of the first year to determine, beyond course work, whether a student will be invited to continue working toward the Ph.D.; this examination also satisfies the university requirement for ascertaining those who may qualify for an M.A. but not for a Ph.D. degree.

Language Requirement. One foreign language and one "alternative skill" shall be satisfied. The language will be decided upon by the student, in consultation with his advisor, and the requirement must be satisfied by the end of the fourth quarter in

residence either through a standard ETS examination or by another method approved by the Graduate Committee. The "alternative skill" may be another language, or a sequence of two courses in statistics, linguistics or computer, and must be satisfied before the qualifying examination can be taken.

Qualifying Examination. The administering committee shall consist of five members: three from the Program, one from a completely unrelated field, and one from a related field (e.g., humanities or social science). In special cases, a four-member committee may be from the Program, assisted by an additional member from an outside School or Program. The examination shall be oral, scheduled after the completion of course work and the language requirement, and it shall consist of four parts: Theory and Methodology (emphasizing either literature and the arts or history and the social sciences); American Institutions; Ethnic Cultures in America; and the Student's Area of Special Interest. Each student, in consultation with his committee, shall determine the minimum reading requirements for the several parts of the examination.

The Dissertation. This is the final requirement. The final draft of the dissertation must be approved by the student's dissertation committee and shall be in accordance with standards set by the Graduate Division. Students will be expected to complete the dissertation in one year. An oral examination covering the student's dissertation topic will be administered by his dissertation committee (composed of three members of the Program) and shall occur when the student has completed the initial draft of the dissertation.

COMPARATIVE CULTURE FACULTY

George O. Roberts, Ph.D. Catholic University of America, *Professor of Sociology and Comparative Culture, Director of Program in Comparative Culture*

Mohamed Abdel-Rahman, M.P.A. University of Southern California, *Associate, African Culture*

Ken Bailey, Ph.D. University of California, Los Angeles, *Lecturer, History and Comparative Culture*

Sandra Barkan, M.A. University of California, Los Angeles, M.A. Makerers University College (Uganda), *Lecturer, African Literature*

Leland C. Barrows, M.A. University of California, Los Angeles, *Lecturer, African History*

Joseph Bell, B.A. University of Missouri, *Lecturer, American Mass Media*

Dickson Bruce, Ph.D. University of Pennsylvania, *Assistant Professor of History and Comparative Culture*

Pete Clecak, Ph.D. Stanford University, *Assistant Professor of Social Criticism and Comparative Culture*

Raul Fernandez, Ph.D. Claremont Graduate School, *Assistant Professor of Economics and Comparative Culture*

James Flink, Ph.D. University of Pennsylvania, *Associate Professor of History and Comparative Culture*

Gilbert Gonzalez, M.A. California State College, Los Angeles, *Acting Assistant Professor of History and Comparative Culture*

Charles Igawa, M.A. California State College, Los Angeles, *Acting Assistant Professor of Political Science and Comparative Culture*

Karen Leonard, Ph.D. University of Wisconsin, *Assistant Professor of History and Comparative Culture*

Mei Liang O. Kato, Ph.D. University of California, Los Angeles, *Assistant Professor of Administration 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, Chinese Language*
Arthur J. Marder, Ph.D. Harvard University, *Professor of History and Comparative Culture*
Jay Martin, Ph.D. Ohio State University, *Professor of English and Comparative Literature, and Comparative Culture*
Oliver L.E. Mbatia, Ph.D. Oregon State University, *Assistant Professor of Economics and Comparative Culture*
Seymour Menton, Ph.D. New York University, *Professor of Spanish and Portuguese, and Comparative Culture*
Carlton Moss, *Lecturer, Film Writing and Producing*
Judyth Moreno, M.A. University of California, Irvine, *Lecturer, Cross-Cultural Tutoring and Communication Skills*
Carlos Munoz, M.A. Claremont Graduate School, *Acting Assistant Professor of Political Science and Comparative Culture*
Julian Palley, Ph.D. University of New Mexico, *Professor of Spanish and Comparative Culture*
Louis Smith, *Lecturer, The Black Community and Urban Society*
Dickran Tashjian, Ph.D. Brown University, *Assistant Professor of Comparative Literature and Comparative Culture*
Sharlie Ushioda, M.A. Harvard University, *Lecturer, Japanese Literature*
Joseph L. White, Ph.D. Michigan State University, *Professor of Psychology and Comparative Culture*

COURSES IN COMPARATIVE CULTURE

1A-B Man in Cultural Perspective (1-1) F, W
Introduction to the study of culture – its evolution and nature as the primary determinant of human behavior. Emphasis upon comparative analysis of cultural systems, particularly similarities, differences, and relationships among the cultures represented in the Program. Prerequisite to the major; must be completed by end of sophomore year.

10 Introductions to Culture Study (1) S
Section A, Introduction to African Culture; Section B, Introduction to American Culture; Section C, Introduction to Asian Culture; Section D, Introduction to Black Culture; Section E, Introduction to Chicano Culture.

Each introductory section will present a general overview of the nature of that particular culture – patterns of behavior, characteristic assumptions, modes of preserving continuity and facilitating change. Designed to follow Comparative Culture 1; One is required in the spring following completion of Comparative Culture 1, and the student may take as many others as he wishes thereafter. Prerequisites: Comparative Culture 1A-B or consent of instructor.

100A Women in Culture (1)
Study of the role of women in American society and comparison to women's roles in other cultures. Female identity and socialization. Anthropological perspectives on the family and sex roles. History of the women's movement and issues of women's liberation.

100B Woman in Literature (1)
Significant works of literature about and/or by women will be evaluated against the period of history in which they were written. The cultural, ethnic, social, and later psychoanalytical milieu of the period in terms of impact on the roles of women developed through literature.

100C Special Studies in the Status of Women in Culture (1)

Section A, Women at Work. A seminar designed to explore and learn more about the working woman, her socialization towards work and career and her images of work. Special attention will be given to women in the professions, and the potential conflict between home and career.

Section B, Women and the Law. An investigation of various problems concerning the legal rights of women in the areas of economics, politics, medicine, marriage and social life.

102 Statistics for Culture Study (1)
A survey of the interpretation of statistical reports and other documents related to the analysis of culture.

103A-B-C Economy & Culture (1-1-1) F, W, S

103A. The economic problems of groups and ways of approaching them. A basic examination of men, ideas, and economic systems.

103B. An introduction to contemporary economic thought; the historical development of economic analysis; the development of industrial capitalism; philosophical and political issues in economics.

103C. Introduction to Marxist economic theories and other orthodoxies; discussion of specific economic systems: capitalism, socialism, etc.

104 A Case Study in Cost-Benefit Analysis (1)
The tools of cost-benefit analysis are used to explore the virtues of different programs for the rehabilitation of drug addicts. Prerequisite: One quarter of economics.

105 Political Economy of the Third World (1)
Economic, political, and cross-cultural analysis of contemporary problems of colonialism, "underdevelopment," and racism in the Third World countries and in the U.S.A. Prerequisite: Consent of the instructor.

106 Comparative Ethnic Politics (1)
An analysis of contemporary ethnic politics in the United States with particular emphasis on the politics of nonwhite ethnic, e.g., Chicano, Black, Asian-American, and American Indian, and the implications of their politics to the American political system.

107 Urban Politics (1)
A systematic analysis of the nature and the future of the urban crisis. The emphasis will be on the politics of poverty, race, and social change. Prerequisite: Consent of instructor.

109A-B Minority Movements in America (1)
A comparative political-sociological analysis of movements in Ethnic America. Emphasis on the Chicano, Black, Asian, and Native-American minorities.

110 Explanations of Human Behavior (1)
A study of explanations for widely occurring social institutions such as the incest taboo, initiation ceremonies, and witchcraft. Emphasis is on evaluation of arguments and methodologies.

111 Urban Conflict: Analysis of Contemporary Issues in the Industrialized Societies and American Cities (1)
Analysis of the structure of urban conflict and various proposals for solution to the problems of housing, education, welfare, urban decay, urban development (as well as redevelopment), and race relations. Emphasis on the notion of community control and self-determination. A workshop may be established to scrutinize the feasibility of chosen strategies for the resolution of conflict(s).

112 Alienation in Modern Man (1) S
The course will examine varying manifestations of the alienation syndrome in modern man and different interpretations of the course.

113 Economics of Discrimination (1)
Studies of occupational ceilings, job penetration, and other factors involving economic discrimination.

114 Urban Problems (1)
Analysis of problems of minorities in the city. This course will require field observation and analysis.

115 Introduction to Philology (1) S
A lecture and discussion course in the nature of language and its spoken and written forms and its relation to thought and other forms of human culture; the verbalization of morality, values, religion, aesthetics, and politics; problems in the interpretation of ideological works of ancient and recent times; semantics and psychology of speech; image, gesture, and onomatopoesis as communication – beyond the dictionary.

116A-B-C Images and Manifestations of Socialism (1-1-1) F, W, S
Historical and critical survey of Marxian perspectives on capitalism and socialism. Fall: An introduction to classical Marxism. Winter: An examination of the Soviet and Chinese experiments and their historical implications for socialism elsewhere. Spring: An inquiry into the prospects for varieties of capitalism and socialism in the United States and the West, the USSR and Eastern Europe, and the Third World.Open only to upper-division students.

117 Economic Development of Ghetto and Barrio (1)
Analysis of the socio-economic, political, economic forces which cause the creation of the ghetto as an underdeveloped colony. Theories and policies necessary for economic development in Third World Countries.

118A-B Comparative Cultures of Western Europe (1-1) F, W
The geography, people, formative historical influences, institutions, and contemporary problems in historical perspective, treated by country (Scandinavia as a unit) and comparatively. Previous course work in European history is desirable but not essential. Fall: Northern Europe (Great Britain, Scandinavia, Germany). Winter: Southern Europe (France, Italy, Spain).

120 The Poor in U.S. History (1) S
A survey of the experience of the poor within the history of the United States. Students will study theoretical framework for the existence of poverty and models for its eradication.

121 Race and Economics (1)
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.

175 Special Topics in Comparative Culture: Topics Vary (1-1-1) F, W, S

Seminar A, Tutoring the Minority Student. Open to seniors of any major with a minimum GPA of 3.0. Working with one or two students each for a minimum of six hours per week, tutors also meet together regularly to share experiences and to submit reports useful in diagnosing the academic problems of minority students on campus. Permission of instructor required before enrolling; majors other than Comparative Culture should provide copies of their transcripts.

Seminar B, Family Law. This course will investigate the impact of law upon the American family unit. The areas of concern will include: the problems of illegitimacy; marriage; the ongoing family and inter-family obligations; abortion, sterilization, and contraception; adoption; divorce; and the disfunctional family – juvenile justice, inter-family tort obligations, and so on. The traditional law school method of case study will be utilized.

180 Theory of Imperialism (1-1-1) F, W, S
A variety of non-Marxist approaches to the notion of imperialism including the classic work of Hobson and the contributions of Schumpeter, Arendt, and Lichtheim. Also, major Marxist works beginning with Karl Marx's various writings on the subject and Lenin's Imperialism, finishing with a survey of the contemporary work of Mandel, Frank, Magdoff, etc.

195 Student-Initiated Courses

197 Field Study (1-1-1) F, W, S

198 Directed Reading (1-1-1) F, W, S

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN COMPARATIVE CULTURE

200A-B-C Scope and Methods of Ethnic and Third World Studies (1-1-1) F, W, S
Theory and model-building in the study of North American and Third World racial and cultural minorities. The seminar will critically deal with ideology, methodology, and with social science stereotypes and myths developed as "objective" social science on racial and cultural minorities by both "dominant" and "minority" social scientists.

201 Cultural Determinants of Elite Formation and Power (1)
A comparative analysis of the major socio-cultural values and norms which influence the accessibility to elite status and power of distinct ethnic groups in selected contemporary societies.

202 Comparative Dominant-Minority Relations (1)
A graduate seminar. The course will examine various dimensions of national integration by emphasizing the process of "power distribution" in ethnically/racially heterogeneous societies.

203 Foreign Aid and Socio-Cultural Change (1)
A graduate seminar. The course will examine the concept of development by critically analyzing the principles of foreign aid, their implementation and impact upon the recipient nations.

204A-B Cultural Manifestations of Art (1-1)
A graduate seminar treating the interrelationships between symbolic forms and cultural life. Selected topics and problems yearly.

205A-B-C Images and Manifestations of Socialism (1-1-1)
Images and manifestations of Socialism and critical survey of socialist theory from (roughly) the Enlightenment to the present. The main focus will be on the interplay among socialist ideals, ideologies, and politics in America and in selected parts of the socialist world. Readings will center on the Marxian tradition, and the primary concern will be to understand the nature and prospects of socialism in the seventies; Soviet socialism, Chinese socialism; and the historical possibilities, or a democratic "socialism" with a human face.

220A-B Seminar in Automotive History (1-1) W, S
A two-quarter research seminar emphasizing major interpretations, problem areas, and available sources. Students will be expected to prepare oral reports on significant bodies of the literature and to complete a directed research project.

221A-B-C Contemporary Social Theory (1-1-1) F, W, S
Radical paradoxes and the future of Socialism: a three-quarter seminar-workshop focusing on the central dilemmas of contemporary marxisms — the theoretical relationships between socialism and communism, and the historical and political prospects for socialism and communism in the USSR and Eastern Europe, in China and the Third World, and in the United States and the West. After selecting a major theme, participants will collaborate on a series of essays which hopefully will be published in a short volume. Prerequisite: Consent of instructor.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN AFRICAN CULTURE

100 Social Structure and Change in Sub-Sahara Africa (1)
Comparative analysis of societies in "Black" Africa which have recently gained their independence from colonial rule.

101A-B History of West Africa (1-1) F, W

101A (to 1807). A survey of the written and non-written history of the peoples who inhabited the region between the Senegal and Niger Rivers, with a focus upon their social, economic, and political institutions.

101B (1807-1960). A survey of the major events and personalities which have influenced the nature of social organization and change in West Africa since 1807.

102 Social Structure and Change in the Middle East (1)
Survey of the impact of religion, politics, colonialism, and acculturation upon developments in the Middle East since 1914.

103 Southern Africa and Human Rights (1) S
Examination of the history and contemporary significance of restrictive social norms in South Africa, Rhodesia, Angola, and Mozambique.

104 History of Eastern Africa (1) S
Survey of the major events and personalities which influenced the nature of social organization and change in Eastern Africa before 1945.

105 African Religions and Value Systems (1) S
A comparative analysis of the views and beliefs which have influenced societies and cultures in Africa.

106 Economic Geography of Africa (1) F
A survey and analysis of the natural resources of Africa, in light of the problems posed by the physical and human factors of geography to their development and distribution.

107A-B Introduction to African Literature (1-1) F, W
Introduction to both the oral traditions and written literature of sub-Saharan Africa. Discussion will center around the political and social themes of the works of major contemporary authors.

108 The Novel in English-Speaking Africa (1)
A survey of the literature of English-speaking Africa, with special emphasis placed on the work of Nigerian, South African, and East African writers. The development of the novel will be discussed and major themes will be examined.

109 French-African Fiction (in translation) (1) S
A study of the evolution of the novel in French-speaking, sub-Saharan Africa. Traditional literature and contemporary literary movements such as Negritude will be considered in terms of the influence they have had on the novel. Translated versions of novels by major authors will be read and discussed.

110 Racial and Ethnic Relations in Africa (1) F
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.

111 Social Structure and Change in the Maghreb (1) W
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) F
An examination of the sovereignty of Israel in light of the challenges it poses to African nations and their commitments in both the Arab League and the Organization of African Unity.

113 Contemporary Nigerian Literature (1)
Development and scope of contemporary Nigerian novels, poetry, and drama will be studied in depth. Emphasis on the works of John Pepper Clark, Chinua Achebe, Wole Soyinka, T.M. Aluko, Elichi Amadi, and others.

118 Peasant Rebellions and Revolutionary Movements in Africa (1) W
Historical reaction of Africans to imposition of colonial rule; indigenous organized resistance; modern movements to correct inequities in dependent states.

120 History of the Congo (1)
An historical study of the political and social development of the Congo from 1885 to the present.

121 Social Structure of Islam (1)
An analysis of Islamic philosophy, with focus upon its ideals and its relevance to the social realities of some Moslem communities in Africa.

122 Ethnic Conflicts and Internal Wars in Modern Africa (1)
A study of ethnic tensions within the emerging nations of Africa. The cases of Nigeria (Biafra), the Congo (Katanga), and the Sudan (Southern Problem) represent the major cases to be studied.

175 Special Topics in African Culture: Topics Vary (1-1-1) F, W, S

180 Senior Seminar on Africa (1) S
Topics in this seminar will change annually.

198 Directed Reading (1-1-1) F, W, S

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN AFRICAN CULTURE

200 Problems of Nation-Building (1) W
A comparative analysis of the factors involved in promoting viable sovereignty in selected African countries. Particular emphasis on the impact of governmental policies and programs of social organization.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN AMERICAN CULTURE

100 Art and Culture (1) W
A one-quarter introductory course primarily on the junior level considering the relationships between art and cultures: the ways culture shapes art, and the way art expresses cultural values. Covers both literature and visual art.

101A-B-C American Arts (1-1-1)
Each quarter the same as one section of Comparative Literature 104. A study of the relationships between American literature and the visual arts out of the commonality of cultural experience. Presented chronologically, so that fall quarter emphasizes literature and art of early New England, winter quarter explores nineteenth-century cultural expression, and spring quarter considers twentieth-century works of literature and painting. Prerequisite: Consent of instructor.

102A American Communities (1)
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. Prerequisite: Consent of instructor.

102B American Communities (1)
An interdisciplinary examination of American community culture and American attitudes toward community in the twentieth century. Prerequisite: American Communities 102A and consent of instructor.

104A Nineteenth-Century American Ethnography (1)
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)
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. Prerequisite: Consent of instructor.

105A Literature and Society (1)
A theoretical assessment of the relationships between literature and society: the concept of utopia and its social implications; the social and literary dimensions of selected utopian and "disutopian" fictions. Readings will include: *WE; 1984; Brave New World;* and *Walden II.*

106A Post-War Social Criticism (1)
Focuses on the major critics and the dominant trends in American social thought which they represent. Critics: James Baldwin, Paul Baran, Daniel Bell, William Buckley, Eldridge Cleaver, J. Wm. Fullbright, John Kenneth Galbraith, Michael Harrington, Irvine Howe, Timothy Leary, Norman Mailer, Malcolm X, Herbert Marcuse, C. Wright Mills, David Riesman, Arthur Schlesinger, Jr., and Paul Sweezy.

106B Post-War Social Criticism (1)
Focuses on major critics and dominant trends in American social thought after 1945.

107 Twentieth-Century American Prose Fiction (1)
Major American novelists between 1900 and the present time.

109 Early New England Arts (1) S
A consideration of the visual art and literature of early New England approached from the cultural commonality of Puritanism. The traditional hypothesis that Puritanism was hostile to art shall be tested against the diverse expression provided by ritual, poetry, sermons, portraiture, gravestones, and furniture. Prerequisite: American Culture 100 or consent of instructor.

112 The Motion Picture in Contemporary American Society (1) S
A brief history of the commercial motion picture's social and economic development; how and by whom theatrical films are made; the motives, machinations, and techniques of film makers in the creation, distribution, and promotion of commercial motion pictures; the contributions and special problems of the various types of people involved in modern film making. Guest lecturers from the film industry – producers, directors, administrators, actors, publicists, critics – will screen and comment on their own films from the vantage point of their area of expertise, and this will then be related to the formation of social attitudes in the United States.

115 Religion in America (1)
An interdisciplinary examination of American religious organizations and activities. Particular emphasis will be placed on sectarian movements as historical and social phenomena.

116A-B American Folklore (1-1) W, S
An overview of the types of folk expression, and the theoretical and methodological considerations relevant to their use as data for the study of cultures.

117A-B American Ideologies (1-1) F, W
Examination of political philosophies/thoughts that are comprised in the political fabric of today's America: capitalism, liberalism, reform liberalism, black liberation (and the Third World Liberation Movement), the New Left, American Marxism, and conservatism.

118 Social Change and the American Writer (1)
Some 20th-century American writers' visions of their changing world, focusing primarily upon fictional representations of and responses to social change in the United States. Such concerns as: the impact of technological change on the American artists and on American society, alienation on a social and personal level and its relationship to changing social conditions, the struggle for identity in the context of accelerating social and cultural change.

119 The American Automobile Culture (1)
An examination of the automobile and the automobile industry as a central factor influencing and influenced by American culture.

120 Power in American Society (1)
A theoretical approach to the study of political power in American society, with consideration of the following questions: Who rules America? How is power distributed? What do community power studies tell us about political powerlessness?

121 Politics and Public Education (1)
The course will examine the roll of public education in contemporary America by scrutinizing various issues that have risen in recent times.

175 Special Topics (1-1-1) F, W, S

197 Field Study (1-1-1) F, W, S

198 Directed Reading (1-1-1) F, W, S

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN AMERICAN CULTURE

200A-B-C Theory and Methods for the Interdisciplinary Study of American Culture (1-1-1) F, W, S
Three-quarter core course seminar which must be taken in sequence. First quarter: Qualitative techniques for the analysis of cultural data — historical documents, literary works and artifacts. Second quarter: Uses of social science concepts and theory in the study of history, literature, and the visual arts. Third quarter: Examination of major interdisciplinary interpretations of American culture. Prerequisite: Consent of instructor.

204 The Artist in American Society (1) S
From 17th to 20th century, this course traces out the changing conception in America of the artist, his social juncture, the nature or object of his art product, and the role he is to play in culture and the development or preservation of culture. The relation of art to society, to the particular problems of the artist in a democratic society, and to the conflicts issuing from the fact that the artist often possesses or is influenced by a cultural heritage differing from that of his fellow citizens. Artists will include writers, painters, architects, and musicians.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN ASIAN CULTURE

1A-B-C Modern Chinese (1-1-1) F, W, S

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

3A-B-C Modern Japanese (1-1-1)

100A Survey History of China (1) F
China from ancient times to the present.

100B Survey History of Japan (1) W
Japan from ancient times to the present.

101A-B-C Literary Chinese (1-1-1) F, W, S
An introduction to reading Chinese texts in the premodern "classical" style; problems of logography, syntax, and the use of the dictionary.

102 Japanese Literature in Translation (1) F
Readings in selected poetry, drama, and fiction from Nara times to the present.

103 Contemporary China (1)
Developments in Chinese cultural life since 1911; thought, literature, politics, the arts.

104 Chinese Literature in Translation (1)
The ancient "classics," poetry, the belletristic essay, criticism, the tale and the novel, from the earliest times to the present.

105 Chinese Thought (1)
The rise and development of Confucianism, Taoism, and Legalism; the impact of Indian Buddhism; Neo-Confucianism, reactions to Western ideologies, and modern Maoism.

106 Buddhism in Asia (1) W
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)
The forces that shaped India; interdisciplinary survey of Indian history, philosophy, religion, and art.

108 Indian Classics (1)
The Indian mind; classics of philosophy, aesthetics, and literature.

109 The Indian Image Abroad (1)
Cultural encounter and dialogue between India and other countries; the evaluation and assimilation of India in the twentieth century.

110 Readings in Modern Chinese (1)
May be repeated for credit.

111 Readings in Literary Chinese (1)
May be repeated for credit.

112 Confucius (1) F
The life and thought of China's greatest sage; reading and analysis of the *Analects* of Confucius; the social, political, and historical influences on the man and his ideas; the major interpretations of his thought by Mencius and Hsun Tzu.

115 Modern Japanese Intellectuals and Writers (1) W
Reading and analysis of modern Japanese critical and creative writers; seminar format, with each student pursuing an individual topic.

116 Ancient China (1)
The beginning of Chinese civilization, from prehistoric times, through the Hsia, Shang, and Chou periods, to 221 B.C.; the origins of Chinese social and political institutions, and the rise of the great schools of thought.

117 Chinese Philology (1)
Analysis of the Chinese script; investigations into the meanings of words and phrases in premodern Chinese texts. Prerequisite: Reading ability in literary Chinese.

118 Asian American Experience (1) F
A survey course in which socio-political-economic dimensions of Asian-American people will be analyzed – their past, present, and future.

119 Contemporary Japan (1) W
The course will examine various issues that form contemporary Japan: changing aspects of both city and rural life, economic planning and development, the role of big business in Japanese politics, Japan's role in the world community.

120 Women in Asia (1) W
The historical and present position of women in Asian cultures. Seminar format with each student pursuing an individual area of interest.

121 Chinese Religion and Ritual (1)
Detailed analysis of the ritual and symbolism of birth, marriage, and death. Consideration of the supernatural, hierarchy, shamanism, and geomancy. Emphasis is on the relationship of religion to the social order, variation of religious forms among different communities, and the functions of religious behavior.

122 Ancient Indian Culture (1)
A study of Indian Society, caste system, class family, individual, food habits, costumes, customs, and traditions.

123 Religions of India (1)
A detailed study of Hinduism with equal emphasis on other religious beliefs that exist in a secular set-up of India.

124 Modern India (1)
Social, economic, and political problems of Modern India. A critical analysis of assimilation and synthesis.

175 Special Topics in Asian Culture

197 Field Study (1-1-1) F, W, S

198 Readings in Modern Japanese (1-1-1) F, W, S
A reading course for students with the equivalent of one year of modern Japanese. Emphasis on learning the grammar and Kanji necessary for an intermediate reading knowledge of Japanese.

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN ASIAN CULTURE

240 Contemporary Chinese Social and Political Thought (1)
Studies in the beginning and development of Maoism in China, its meaning and implications, and the nature and sources of opposition to it.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN BLACK CULTURE

1 Communication Skills for Black Students (1) F, W, S
Sociolinguistic approach to the writing, reading, and speech problems peculiar to Black students, emphasizing the structural differences between ordinary speech and the written "University dialect."

100A-B-C Contemporary Problems (1-1-1) F, W, S
This course will deal with problems related to race and poverty and will involve field work and participant observation in programs like Operation Bootstrap and Core in Los Angeles and Orange Counties.

104 Selected Black Literature (1)
A study of selected works of Afro-American fiction, poetry, and drama, works representative of the evolution of the Afro-American spirit. Works by: Chestnutt, DuBois, McKay, Cullen, Hughes, Wright, Himes, Ellison, Baldwin, Marshall, Elder, Bullins, Malcolm X, and LeRoi Jones.

105 The Image of the Black Man in American Films (1) W
A history of the portrayal of the black man in American films from "Birth of a Nation" to the present.

106 Workshop in Urban Film-Making (1) S
Continuation of Black Culture 105. This course will provide instruction in the technique of film-making and require each student to make a film dealing with minority or urban problems.

112 Black Psychology: A Psychological View of the Black Experience (1) F
An examination of the personality patterns, psychological dynamics, and socio-cultural styles which have emerged from the encounter of Black people with the American Culture.

113 Black Psychology: The Black Child and the Urban School System (1) F
Exploration of the interaction between the Black child and the school in terms of critical issues such as intelligence, achievement, motivation, conformity, alienation, and social change.

114 Black Psychology: Black Power (1) W
An examination of the psychological implications of the Black Power concept especially as it relates to a rapidly emerging awareness of the need for self-defined identity anchored in the Black experience.

115 Black Psychology: Mental Health and the Black Community (1) W
Examination of the dynamics related to both psychological actualization and psychopathology. Course will also include an exploration of group processes, counseling, and psychotherapeutic models.

116 Social Organization of the Black Community
A selective study of relevant institutions and life styles of the Black community. The focus will be on those forms of social organizations that have developed out of the Black experience including the family, social classes, protest organizations, and political parties.

121 Black Writers Workshop
Practice in writing prose, fiction, drama, short stories, book reviews, and essays from the perspective of the Black experience.

124 Black Linguistics (1) W
A study of verbal and non-verbal communication as historically evolved from the Black experience and existing as an integral part of contemporary Black America's life style.

125 Black Oral Expressive Styles (1) S
Varieties of oral expressions and non-verbal communicative gestures from the Black experience are explored within the scope of the most recent language and communication theory. Concentration on broadening social awareness and developing communicative skills through familiarization and comprehension of Black English.

126 The Philosophy of Black Radical Thought (1)
Emergence of Black Radical Thought through slavery, reconstruction, post-reconstruction, pre-World War II, and contemporary times; as it is expressed through music, sermons, literature, social movements, drama, and political action. Consideration of geographical time frames such as Northern, urban, Southern, rural, and the like.

127 The Black and Immigrant Novel
Studies of novels written by Black and immigrant novelists; emphasizing the differences and continuities between ethnic groups.

129 Afro-American History
The history of Black people in the United States from 1559 to Reconstruction. Deals with some traits of their African background and their slave experience in the United States.

130 Black Social Movements and Ideologies
Covers some of the major Black movements of the 20th century from 1920 to 1972. Emphasis will be on Marcus Garvey and his Back-To-Africa Movement; Adam Clayton Powell and his Harlem Movement; Nation of Islam; A. Philip Randolf and the March on Washington; Martin Luther King and the Civil Rights Movements; and the Black Power Movements.

175 Special Topics: Topics Vary (1-1-1) F, W, S

197 Field Study (1-1-1) F, W, S

198 Directed Reading (1-1-1) F, W, S

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN BLACK CULTURE

200A-B-C The Social-Psychological Dynamics of the Black Ethnic Experience in America (1-1-1)
Three-quarter graduate seminar focusing on the Black experience as perceived through literature, drama, music, community institutions, economic systems, political activity, and life styles. Methodological approaches and research strategies; the pattern of delivery service in fields such as health care, housing, education, and welfare; significant directives for social change.

201 Ideology of Blackness (1)
A critical examination of literary and activist manifestations intended to promote "black" cultural identity and affirmation in Africa, the Americas, and Europe since 1772.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN CHICANO CULTURE

1 Communication Skills for Chicano Students (1-1-1) F, W, S
Sociolinguistic approach to the writing, reading, and speech problems peculiar to Chicano students, emphasizing the structural differences between ordinary speech and the written "University dialect."

103 Introduction to Economic Discrimination (1)
This course explores economic aspects of discrimination with focus on the Chicano. The methodological approach is eclectic with borrowings from the marginalist, Marxist, and institutional writers in economics and from other social sciences.

105A-B Barrio Studies (1-1) W, S
In cooperation with members of a barrio organization, students will define the problems of

a Chicano community as they relate to welfare, housing, unemployment, underemployment, education, police-community relations, and political representation and explore the possibility for the solution of those problems within the context of participation-observation research techniques.

106 Contemporary Mexican-American Problems (1)
Studies in the sociology of the barrio and agricultural communities.

111A-B Chicano Linguistics (1-1)
An elucidation of the relationship between "Pocho" Spanish (barrio Spanish), standard Spanish, and English in an interdisciplinary approach to the comparative analysis of the Chicano and dominant Anglo cultures; emphasis on the linguistic origin of cross-cultural conflicts, particularly those which impede academic achievement at all educational levels.

115 Chicano Political Behavior: Scopes and Methods (1) F
A critical analysis of social science methodology as it has been applied to the study of Chicano political behavior. General hypotheses related to the Chicano political experience in the United States tested either by micro and macro empirical models of political analysis or critically analyzed within normative conceptual frameworks.

116 Chicano Politics (1) F
Examination of dominant themes of social science studies on the Chicano which present findings and conclusions germane to the study of Chicano politics. A model of neo-colonialism will be developed in accordance with a Chicano perspective that views the barrio as an "internal colony." Also, a critical analysis of the Chicano Power Movement within the context of its impact on American politics and on Chicano culture.

118 Chicano Intellectual Thought: Seminar (1) S
A critical examination of Chicano literature, focusing on social and political thought and attempting to trace its origin to the philosophical and ideological writings of Mexican and other Third World intellectuals.

119 Protest Movements in Chicano History (1) W
A study of Mexican protest movements in the United States since 1848. Survey of the literature with an emphasis on student research.

120A-B The Chicano Community in the Urban Setting (1-1) W, S
Two-quarter course focusing on impact of urban life on Chicano community. First quarter: reading of materials relating to urban studies, acquainting student with methodology; second quarter: student research project on an aspect of the urban Chicano community.

121 Education of the Chicano Community (1) S
A study of the educational complex into which Chicanos have been placed. Analysis of the philosophy and practice of educational institutions and of their effect upon the Mexican community. Prerequisite for all Comparative Culture students emphasizing the study of Chicano Culture.

122 Chicano History Since 1848 (1)
A survey of the history of Mexicans within the United States. The course will emphasize the socio-economic experience of Chicanos in the southwest with emphasis on the 20th century.

175 Special Topics: Topics Vary (1-1-1) F, W, S

Section A, La Chicana.

197 Field Study (1-1-1) F, W, S

198 Seminar A, The Image of the Chicano in American Literature (1) S
This is a reading course; the student will read at least six books selected from a reading list plus a selection of contemporary Chicano literature.

198 Seminar B, Contemporary Chicano Literature (1) S
This is a reading course; the student will read as much as possible (minimally, the equivalent of nine full-length books) from a list of contemporary Chicano writing arranged (1) to move from folk narrative to "serious" literature and (2) geographically (e.g., the work of Chicanos in Mexico, Texas, New Mexico, Arizona, and California).

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN CHICANO CULTURE

200A-B-C The Social-Psychological Dynamics of the Chicano Ethnic Experience in America (1-1-1)
A three-quarter graduate seminar focusing on the Chicano experience as perceived through literature, drama, music, community institutions, economic systems, political activity, and life styles. Methodological approaches and research strategies; the pattern of delivery service in fields such as health care, housing, education, and welfare; significant directives for social change.

201 Seminar on Chicano History (1)
Review of the literature on the history of Mexicans in the United States with a critical analysis of the methodology and areas of study. Students will be required to carry out individual research and to write a research paper upon a theme relating to Chicano History.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

COURSES IN LATIN AMERICAN CULTURE

100 Pre-Columbian Art and Architecture (1) W

101 Latin American Economic Problems (1)
A study of the processes and problems of promoting economic development in Latin America. Includes discussion of national economic planning, population, international assistance. Each student will write a research paper on a particular problem of development of a Latin American country.

102 Latin American Politics (1)
Acquiring an understanding of the revolutionary process in Latin America through critical analysis of the Mexican and Cuban revolutions, and the social, economic, political forces involved in the struggle for power throughout Latin America.

103 Latin American Culture (1)
A study of political, social, economic, and intellectual forces in Latin America. Major topics: society, politics, and economy; Latin American thought; stability and instability, including revolutionary change; changing Latin American cultures.

105 Historical Survey of Development in Latin America (1)
An examination of the historical foundations of social, political, and economic institutions in Latin America and of their significance in the quest for modernization. Iberian colonization, independence movements, and the evolution of the national states to the present.

110 Cuban Civilization (1)

198 Directed Readings (1-1-1) F, W, S

199 Independent Study (1-1-1) F, W, S

GRADUATE COURSES IN LATIN AMERICAN CULTURE

201A-B-C Latin American Culture
Exploration of the historical causes of under-development in Latin America. Emphasis will be on the value of the different methodologies that have been used in the past to analyze the problems of this area of the world.

202 Reform and Revolution in Latin America (1)
Seminar focusing upon models for change in Latin America since the Wars for Independence. Students will analyze and compare the different approaches to social change and write a research paper on a theme relating to the seminar.

298 Directed Reading (1-1-1) F, W, S

299 Independent Study (1-1-1) F, W, S

The following courses are given in the Department of Spanish and Portuguese and may be counted toward a comparative group: 110A-B, 130A-B-C, 131A-B-C, 150, 233A-B-C, 234, 235, 260A-B-C.

COURSES IN RUSSIAN CULTURE

The following courses are given in the Program in Russian and may be counted toward a comparative group: 20A-B, 150A-B-C.

20A-B Russian Civilization (1-1) W, S

150A-B-C Russian Literature in Translation (1-1-1) F, W, S

DEPARTMENT OF INFORMATION AND COMPUTER SCIENCE

The development of the modern digital computer has made possible the solution of large-scale information processing problems in science, industry, and government. These problems include predicting the orbit of a satellite, simulating the economy, keeping track of inventories, and checking income tax returns. Such problems are solved by having the computer execute a procedure – a sequence of information processing operations including but not limited to the conventional arithmetic operations of addition, subtraction, multiplication, and division. Information and computer science is concerned with the development of procedures which are effective and efficient, languages suitable for stating these procedures, and systems for executing procedures.

The implications of research in the development of information processing procedures and of systems for preparing and executing these procedures extend beyond the direct applications in using the modern digital computer to solve problems ranging from bookkeeping to the control of orbiting satellites. Many animate and inanimate systems can be usefully viewed as information processing systems and analyzed in terms of the way they represent, store, and process information. Thus information and computer science provides a point of view, an approach, for studying phenomena in many sciences.

Degrees Offered

Information and Computer Science ..... B.S., Ph.D.

UNDERGRADUATE PROGRAM

The undergraduate program in information and computer science is designed 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.

Students enrolled in other degree programs who are 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 re-

quire 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.

Students are advised by faculty and staff members on academic matters. Advising of undergraduate students is coordinated by the departmental counselor who also provides information on vocational and counseling services available on the campus. Advising of graduate students is coordinated by the faculty graduate advisor.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

Departmental Requirements

Mathematics 2A-B-C and two of the following one-year sequences in mathematics: 3, 140, 155, 120, 121, 130, 131, 170; Information and Computer Science 1, 2, 3, 110A-B, 120A-B, 130A-B, 190A-B-C.

These requirements are under study and may be changed in the future. Students should consult the Departmental Information Bulletin, issued in fall 1972, for a complete listing of courses and subject content.

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. See the description of the Graduate School of Administration program in this catalogue. Inquiries should be directed to the Graduate School of Administration.

GRADUATE PROGRAM

The doctoral program is designed to prepare teachers and researchers in computer science. The program consists of three phases: study of core topics of computer science, followed by the preliminary examinations (typically taking 12-15 months); independent research into several specialized topics of interest, followed by a candidacy examination (typically 9-18 months); significant research, followed by a public defense of the written dissertation (typically 15-24 months).

The program is designed to be a full-time activity since quality graduate education demands the full concentration of students and faculty. No Master's degree is offered.

Substantive interests of an academic department are, of course, governed by the interests of its members (including students). The main areas of interests of the ICS Department are artificial intelligence, software systems, computer systems, and computer-aided instruction. There are possibilities for dissertation work in many sub-areas of these broad categories and, in addition, it is possible for a thesis student to work under the direction of a faculty member of another department.

Although described in a formal manner below, the program in fact strives to maintain an informal environment conducive to learning and individual development of students' strengths. The small size of the program (approximately 10 faculty and 30 students in 1972) makes frequent and informal interaction between all members of the department a reality.

Admission to the Program

Approximately ten students are admitted each year. Applications are evaluated on the basis of the student's prior academic record and more importantly, his or her potential for creative professional contribution to computer science. Applicants are expected to have skills in computer programming at least equivalent to those obtained by good students in a one-year college-level course in programming, and 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.

Applicants should take the verbal and quantitative sections of the Graduate Record Examination. Where feasible, personal interviews are desired, but inability to have one in no way prejudices an application. Additional information on the formalities of application can be obtained from the Office of Graduate Admissions. Further information on the department and the graduate program can be obtained by writing to the department.

Financial Assistance

Limited financial assistance is offered to students in the form of teaching and research assistantships. Stipends vary, depending on the duties involved and range upwards from $3000. About half of the students in residence in 1972 will have support from the department. For nonresidents of California, a very limited number of out-of-state tuition waivers are available.

Requirements for the Ph.D.

The program consists of three phases of study and examination. Phase I begins when the student enters graduate school and ends with the preliminary examinations. During this phase the student will spend most of his time acquiring breadth of knowledge in computer science and related subjects via reading and/or successfully completing the courses offered in the core curriculum (ICS 200A-B-C, 210A-B-C, 220A-B-C). Courses are *not* required and preliminary exams may be taken without taking all (or any) courses. The department requires that all graduate students participate in teaching activities sometime during their tenure in the department. This is often done during Phase I.

Phase II begins after passing the preliminary examination and ends with the candidacy exam. The student's main aim during this phase should be to gain depth of experience in computer science without necessarily making a commitment to a definite thesis topic. The student should be taking specialized courses in computer science and attempting minor research projects under the supervision of a faculty member. The student should attempt to study at least one topic in depth while developing a capability for independent research. Typically, after one year, the student applies for admission to candidacy. After the faculty reviews the student's progress and potential, a committee of the faculty is appointed by the Graduate Division to conduct the candidacy examination.

Phase III begins after admission to candidacy. During this period the student is engaged in dissertation research. The research is expected to be an original and substantial contribution to computer science. The student is expected to demonstrate professional maturity and independence in doing the research. One or more faculty members normally work closely with the student in an advisory capacity. This phase normally lasts 12 to 24 months but may be extended provided the faculty determines that the student is making satisfactory progress.

INFORMATION AND COMPUTER SCIENCE FACULTY

Julian Feldman, *Assistant Chancellor for Computing, Professor of Psychology and Information and Computer Science, Chairman of the Department of Information and Computer Science*
William Ash, *Assistant Professor of Information and Computer Science*
Robert J. Bobrow, *Lecturer in Information and Computer Science*
John S. Brown, *Lecturer in Social Science and Information and Computer Science*
David J. Farber, *Acting Associate Professor of Information and Computer Science*
Peter Freeman, *Assistant Professor of Information and Computer Science*
Marsha D. Hopwood, *Lecturer in Information and Computer Science*
William Howden, *Lecturer in Information and Computer Science*
William M. Newman, *Assistant Professor of Information and Computer Science* (on leave fall 1972 and winter 1973)
Frederic M. Tonge, *Professor of Administration and Information and Computer Science*

Associated Faculty

Alfred M. Bork, *Professor of Physics and Information and Computer Science*
John P. Boyd, *Assistant Professor of Anthropology and Information and Computer Science*
Myron L. Braunstein, *Associate Professor of Psychology*
George W. Brown, *Professor of Administration and Information and Computer Science*
Ralph W. Gerard, *Professor Emeritus of Biological Sciences*
Robert M. Gordon, *Lecturer in Social Ecology*
Henry J. Hamburger, *Assistant Professor of Mathematical and Computer Models*
Keith E. Justice, *Associate Professor of Population and Environmental Biology and Information and Computer Science*
Jack Sklansky, *Professor of Electrical Engineering and Information and Computer Science*
Kenneth N. Wexler, *Assistant Professor of Psychology*

LOWER-DIVISION COURSES IN INFORMATION AND COMPUTER SCIENCE

1 Introduction to Digital Computation (1)
Concepts and properties of procedures, language and notation for describing procedures, for their solution, application of a specific procedure-oriented language to solve simple numerical and non-numerical problems using a computer.

2 Computers and Programming (1)
Logical basis of computer structure, machine representation of numbers and characters, flow of control, instruction codes, arithmetic and logical operations, indexing and indirect addressing, input-output, subroutines, linkage, macros, interpretive and assembly systems, pushdown stacks, and recent advances in computer organization. Several computer projects to illustrate basic concepts will be incorporated. Prerequisite: ICS 1.

3 Information Structures (1)
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures, and storage allocation and collection. Multilinked structures. Symbol tables and searching techniques. Sorting (ordering) techniques. Formal specification of structures, data structures in programming languages, and generalized data management systems. Prerequisite: ICS 2.

10 Computer Appreciation
An introduction to the current state of information and computer science and technology

for the non-technical student. Provides an overview for the person who wants to understand computers and automation as a major element in our technological society. Terminology and concepts; information structures; hardware and software; programming languages; applications in business, science, and education; implications.

15 Semantics of Computing (1)
Introduction to computers intended primarily for students in the social sciences, fine arts, and humanities. In this course we shall stress the non-numeric uses of computers including their use as powerful symbol manipulators. Emphasis will be on discovery of computing concepts through actual use of computers. Credit may not be received for both this course and ICS 1.

90 Survey of Programming Languages (1)
Presentation and comparison of the procedural and data representation capabilities of several programming languages. Computer solution of problems in each language. Prerequisites: ICS 1 and 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 (1-1-1)
Same as Engineering 220A-B-C.

255A-B Seminar in Self-Organizing Systems (1-1)
Same as Engineering 221.

256 Seminar in Computer Architecture (1)

257 Seminar in the Economics of Computation (1)

258 Seminar in the Social and Economic Implication of Computers and Automation (1)

259 Seminar in Optimization Techniques (1)

260 Seminar in Computational Linguistics (1)

261 Seminar in Numerical Analysis (1)

262 Seminar in Models of the Brain (1)

270 Workshop in Programming Languages, Translators, and Systems (1)

271 Workshop in Artificial Intelligence (1)

272 Workshop in Automata Theory (1)

273 Workshop in Formal Languages (1)

274 Workshop in Pattern Recognition (1)

275 Workshop in Self-Organizing Systems (1)

276 Workshop in Computer Architecture (1)

280 Special Topics in Information and Computer Science (1)

298 Thesis Supervision (1)

299 Individual Study (1)

PROGRAM IN SOCIAL ECOLOGY

The Program in Social Ecology was incorporated as an academic unit at UCI on January 1, 1970. While the Program is organized like any other department of the University, it is unique in emphasizing all knowledge and methodology associated with the area *man and his environment.*

The Program was conceived and developed for the purpose of providing direct interaction between the intellectual life of the university and the recurring problems of the social and physical environment. And since it was founded on the conception of man as a biological organism in a cultural-physical environment, the orientation is necessarily multidisciplinary. This orientation pervades the curricula which are aimed at equipping students to attack and solve environmental problems. In our context of usage, environmental problems include all aspects of man's relation to other men and to his social heritage, on the one hand, and man's relation to his broader biological and physical environment, on the other.

It is axiomatic in the Program that learning must be applicable to the community and the community must serve as an auxiliary source of educational enrichment. Because the approach combines environmental education and community activity, the curricula of the Program are organized by problem area, not by discipline or academic subject matter. The curricula are oriented toward producing a coordination between on- and off-campus experience, theoretical and applied learning, so that each enhances and enlarges the other. The Program is innovative in that it 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 fields of assignment and their associated study programs; required field study involves one course per quarter during the junior and senior years.

The following are agencies to which students have been assigned to satisfy the field study requirement: Orange County Planning Department; California Youth Authority; Orange County Community Mental Health Services (regional teams, central office consulting, research); Orange County District Attorney's Office; Environmental Education Council; Mardan School for Educational Therapy; Veteran's Administration Hospital; Riverside Police Department; Headstart School; Long Beach Neuropsychological Institute; Providence Speech and Hearing Institute; Big Brothers; Fairview State Hospital; and Costa Mesa Police Department.

In operation, the curricula in Social Ecology are aimed at three classes of students. First, the Program provides the context for educating people needed in professional capacities by various governmental agencies and industrial departments. It has been an initiator, for example, of specialized training in the mental health area at the university level — where the B.A. degree fully qualifies Social Ecology graduates for a new classification of mental health worker.

Second, the Program provides the setting for preparing students for professional specialization in schools of administration and law, as well as for graduate work in such academic units as social sciences and biological sciences. To illustrate, our curriculum in criminal justice is proving to be excellent pre-law training. In this curriculum, students spend one-fourth of their junior and senior years in such field activities as the courts, law enforcement agencies, probation units, and the criminal jus-

tice council. The Program expects to produce graduates with unique abilities and capacities for graduate education. Even established disciplines are calling more and more for people with cross-disciplinary backgrounds.

And finally, the courses of study of the Program are highly appropriate for educating students to become more effective and knowledgeable citizens because of a familiarity with community problems and the potential modes of solution, regardless of students' ultimate career objectives. For example, working in a child guidance clinic and a crisis clinic can be of immense value to a person who later chooses teaching as a career goal; similarly, assignment to air or water pollution control agencies can be of great help to someone who chooses industrial management as a career.

By making most of its courses available to students majoring elsewhere on the campus, the Program encourages the development of an environmental outlook among students whose primary interests are more traditional. (The principal exception to this policy is field study; supervision of field study is an extremely time-consuming activity on the part of the faculty, so enrollment is limited to majors.)

Major Subprograms

Mental Health (Community Psychology, Behavior Modification): The mental health subprogram focuses on community intervention and behavior change. A major tenet is that dysfunctional behavior must be considered within the context of the immediate environment, physical as well as social. Courses are offered on forms of psychopathology and discordant behavior patterns in children, adolescents, and adults. Students learn how to make systematic behavioral observations and careful assessments of all factors contributing to problems in living. Courses are also offered on strategies of psychological intervention, including interviewing, counseling, group therapy, and behavior modification. Adequate mastery and evaluation of the relevant research literature is a critical component, as is the application of sound research techniques in the evaluation of each student's own work. Approximately 50 agencies are available for field study in this area, including community clinics, state hospitals, and preschool and special education programs. Depending on his interests, experience, and competence, a student may do crisis intervention, serve as co-leader in group or play therapy, plan and implement remedial programs for handicapped children, or serve as a consultant for families or classrooms, to name only a few areas of the mental health field study. A major objective is to train social change agents who, after completing their undergraduate education, will be able to function as competent mental health professionals in the community.

Urban and Regional Planning: The urban and regional planning subprogram is oriented toward the processes rather than the results of planning. The ultimate goal of planning is the achievement of living spaces conducive to the achievement of optimum human satisfaction. Field study is available in planning departments and community action councils.

Environmental Quality and Environmental Health: The subprogram encompassing environmental quality and health is primarily concerned with the interaction of man and his physical environment. Courses in this subprogram include Air Pollution, Water Quality, and Noise Pollution. Special emphasis is placed upon the roles of individual citizens and community organizations, both governmental and private, in maintaining and enhancing the quality of the human environment. Field study is done at environmental information centers and pollution control agencies.

Human Ecology: The subprogram in human ecology emphasizes study oriented toward the biological substrata of man and his environmental interactions. Examples of relevant courses are Human Evolution, Dynamics of Human Populations, and Fundamentals of Ecology.

Criminal Justice: The criminal justice subprogram provides Social Ecology students an opportunity to examine critical issues in the nature of crime and society's reaction to legally prescribed behavior. Course offerings range from analyses of criminal behavior systems and the philosophical underpinnings of social control theories to studies of the operation of criminal justice agencies. Field study placements are available in police departments, prosecutor's and public defender's offices, probation and parole agencies, and the state juvenile prison system. Students in the criminal justice subprogram have found their training to be excellent preparation for law and graduate schools, as well as for professional careers in law enforcement and corrections.

Educational Policy and Institutions: Although Social Ecology has no formal undergraduate program in teacher education, students interested in careers with educational institutions are offered a variety of field placements with public and private schools from the nursery through high school years. Students are encouraged to take courses through the Office of Teacher Education in addition to those relevant in Social Ecology. Students interested in obtaining teaching credentials should coordinate their programs closely with both that office and their Social Ecology academic advisor.

Degrees Offered

Social Ecology ..... B.A.

Honors at graduation will be awarded to about 12% of the graduating seniors. Initial eligibility for such honors will be on the basis of grade point average. Among those qualifying, the awards of *summa cum laude, magna cum laude,* and *cum laude* shall be determined by a committee that considers, in addition to grade point average, scholarship as displayed in day-to-day work, contributions to the community of social ecologists, performance in field assignments, and a paper defining a community problem and demonstrating insight into its causes, its bases of continuance, and the potential paths toward solution.

Limitations on Enrollments

The Program in Social Ecology is predicated on a close faculty-student-community interaction and upon close supervision of field work. While an attempt has been made to stretch resources to the breaking point, it has not been possible to admit all students who have requested transfer into Social Ecology. Those who cannot be accepted into the Program as majors because of capacity enrollment may request that their names be placed on a waiting list in the Program office to insure earliest possible admission. But admission cannot be assured.

Requirements for the Bachelor's Degree

University Requirements: See page 22.

Departmental Requirements

Social Ecology 1A-B-C; Social Ecology 10; six quarter courses of Field Study (Social Ecology 197); the appropriate prerequisites for the field study paths under-

taken (these prerequisites are numbered Social Ecology 2 through 9); and four upper-division courses in Social Ecology (those numbered 101 or above).

During his junior and senior years, the student majoring in Social Ecology is required to devote one course per quarter to his field assignment. Field work in Social Ecology must be sharply differentiated from the work of a social worker or a community worker or any comparable applied job. The field program is aimed at enhancing the *learning* experience of students by making field and academic aspects directly relevant to each other. Field study assignments are under the direct supervision of field personnel, but each field project has a faculty advisor who visits students and evaluates their work, coordinates various efforts, and is responsible for the intellectual-academic policies involved in the work. Moreover, some aspect of the advisor's own research is presumably in the area under his direction and further supports the work in the field and coordination with campus activities.

Students in all field assignments work as a part of a project team. Their particular assignments are a function of their backgrounds and accumulating experience. When appropriate, they become participating members of the community of their assignments.

While there is broad overlap, field assignments are classified in accord with the MAJOR SUBPROGRAMS of Social Ecology. Thus, for example, assignment to the Orange County Planning Department is classified under Urban and Regional Planning, while assignment to the Child Guidance Clinic of Orange County is classified under Mental Health. Students choose subprogram area and specific agency within that area in consultation with faculty advisors. To facilitate these selections, there is a manual of available field placements for each subprogram. (Students may pick up these manuals in the Social Ecology office and apply to start field study during the third quarter of their sophomore year.) It is expected that students will choose field agencies in at least two subprogram areas.

On the first Thursday of each quarter there is a noon meeting for all students expecting to do field study assignments that quarter. There is a general discussion about field study assignments, what is expected in the field, and any problems that have been encountered. This is followed by individual enrollment into field study by the advisors. The importance of this meeting must be emphasized as it is the only time to enroll into new field study assignments.

Planning a Program of Study

Since there is great flexibility in choices among academic courses and field study placements, it is extremely important that each major work closely with his academic advisor. This contact will facilitate constituting a coherent academic plan for the students, providing important feedback to aid achievement of primary goals and adequate bases for field study selection.

SOCIAL ECOLOGY FACULTY

Arnold Binder, Ph.D. Stanford University, *Program Director, Professor of Social Ecology*

Albert J. Ahumada, Jr., Ph.D. University of California, Los Angeles, *Assistant Professor of Psychology and Social Ecology*

Eugen C. Andres, J.D. Hastings Law School, *Lecturer in Social Ecology*

Paul D. Arthur, Ph.D. California Institute of Technology, *Associate Dean, School of Engineering, Professor of Aerospace Engineering and Social Ecology*

Melvin H. Bernstein, Ph.D. University of California, Los Angeles, J.D. Harvard University, *Lecturer in Social Ecology*

Robert E. Bickner, B.A. University of Florida, *Research Economist, Public Policy Research Organization, Lecturer in Social Ecology*

Virginia L. Binder, Ph.D. Indiana University, *Lecturer in Social Ecology*

Arthur S. Boughey, Ph.D. Edinburgh University, Scotland, *Professor of Population and Environmental Biology and Social Ecology*

Ralph A. Catalano, Jr., M.R.P. Maxwell School of Citizenship, Syracuse University, *Acting Assistant Professor of Social Ecology*

Richard L. Degerman, Ph.D. Johns Hopkins University, *Assistant Professor of Psychology and Social Ecology*

Bernard A. Desenberg, Ph.D. Ohio State University, *Director, Instructional Media Services, Lecturer in Social Ecology*

Amer El-Ahraf, Dr. P.H. University of California, Los Angeles, *Assistant Professor of Social Ecology*

John R. Elpers, M.D. Indiana University School of Medicine, *Assistant Clinical Professor, Psychiatry and Human Behavior, Lecturer in Social Ecology*

Henry Fagin, M.S. Columbia University, *Professor of Administration and Research Administrator, Public Policy Research Organization, Lecturer in Social Ecology*

John V. Flowers, M.A. University of Southern California, *Assistant Professor of Social Ecology*

Gilbert L. Geis, Ph.D. University of Wisconsin, *Professor of Social Ecology*

Louis A. Gottschalk, M.D. Washington University Medical School, *Professor and Chairman, Department of Psychiatry and Human Behavior, Professor of Social Ecology*

Robert P. Green, M.P.A. University of Southern California, *Lecturer in Social Ecology*

Burton B. Milburn, Dr. P.H. University of California, Los Angeles, *Lecturer in Social Ecology*

John T. Monahan, M.A. Indiana University, *Acting Assistant Professor of Social Ecology*

Alexander M. Mood, Ph.D. Princeton University, *Director, Public Policy Research Organization, Professor of Administration and Social Ecology*

Michael W. O'Neill, M.S. Michigan State University, *Acting Assistant Professor of Social Ecology*

John R. Parker, J.D. University of Michigan Law School, *Lecturer in Social Ecology*

E. Mansell Pattison, M.D. University of Oregon Medical School, *Associate Professor of Psychiatry and Human Behavior, and Social Ecology*

Pamela A. Reagor, Ph.D. University of Illinois, *Lecturer in Social Ecology*

Benson Schaffer, J.D. Southwestern University School of Law, *Lecturer in Social Ecology*

Carol K. Whalen, Ph.D. University of California, Los Angeles, *Assistant Professor of Social Ecology*

Eleanor P. Wynne, M.A. University of Washington, M.A. University of Oklahoma, *Lecturer in Social Sciences and Social Ecology, Director of Laboratory Preschool*

UNDERGRADUATE COURSES IN SOCIAL ECOLOGY

1A-B-C Survey of Social Ecology (1-1-1)
An introduction to community problems by discussions of Social Ecology field study areas. In addition to faculty participation conducted in proseminar fashion, resource professionals from the community will present relevant material and lead discussions.

2 Introduction to Behavior Change (1)
Preparation of the Social Ecology major for field studies in which he will work toward behavior change for individual pupils, clients, patients, etc. Emphasis on assessment of attitudes, motivations, expectations, and behaviors of the person in his environment, and applications of learning theory for change. Prerequisite for Soc. Ecol. 197E.

3 Introduction to Environmental Quality and Health (1)
A survey of those aspects of the physical environment which have major effects upon the quality of life and the ways in which abuse of the physical environment is threatening the world. Prerequisite for Soc. Ecol. 197F.

4 Introduction to Social Change (1)
Prerequisite for Soc. Ecol. 197G.

5 Introduction to Urban Systems and Regional Planning (1)
Prerequisite for Soc. Ecol. 197H.

6 Introduction to Community Mental Health (1)
Exploration of various techniques of social action aimed at maximizing the treatment potentials for individuals and groups. Basic concepts and strategies of community mental health. Prerequisite for Soc. Ecol. 197D.

7 Introduction to Criminal and Juvenile Justice Systems (1)
Our legal system from its common law heritage. An introduction to criminal and constitutional law in the U.S. and discussion of our constitutional structure, corrections, probation and parole, and the police activities of arrest, search and seizure, and interrogations; Juvenile Court law and procedure discussed separately. Prerequisite for Soc. Ecol. 197I.

8 Introduction to Educational Policy and Institutions (1)
Prerequisite for Soc. Ecol. 197J.

9 Fundamentals of Ecology (1)
An introduction to the basic concepts in ecology: populations, communities, and ecosystems; the nature of diversity, stability, productivity, cycling, and succession; resource utilization and modeling; regulatory mechanisms in ecosystems and the ecological and social consequences of their disturbances. Prerequisite for Soc. Ecol. 197K.

10 Research Design in Social Ecology (1)
An introduction to the logic behind and methods of designing research studies and experiments in Social Ecology. Statistical reasoning necessary for relevant data analyses. Prerequisites: Soc. Ecol. 1A-B-C or Soc. Ecol. 100; may be taken concurrently.

11 Methods of Interviewing (1)
Preparation of the Soc. Ecol. major for the development of interviewing skills needed in field study. Various methods tailored to different situations involving exchange of information.

13 Methods of Small Group Interaction (1)
Theories and techniques of small group dynamics and structure reviewed and evaluated. Comparisons made among group methods of leadership development, conflict resolution, sensitivity training, social action, growth, and encounter. A laboratory in group experience included.

25A-B *Methods of Counseling* (1-1)
Exploration of the methods and techniques of counseling and the differences between interviewing, counseling, and therapy. A behavioral counseling strategy emphasizing educational counseling. Specific cases involving reinforcement, social modeling, counter conditioning, and cognitive techniques with an emphasis on the counselor as consultant rather than as the direct interviewer.

31 Physics of the Environment (1)
Same as Physics 13. The problems of the environment emphasizing the physical principles on which our technological society is based. The physicist's view of earth and man's activities as a thermodynamic system, restricted to those aspects of the environmental crisis which can be understood on a quantitative, scientific basis.

34 Water Quality and Society (1)
A survey of the chemical, biological, and sociopolitical aspects of water quality and their implications for our society. Citizen attitudes about the recreational, agricultural, waste disposal, and other aspects of water utilization and consumption, emphasizing the social decision processes which affect the allocation of water resources.

45 Biological Basis for Social Behavior (1)
Biological factors form a substantial segment of many of the behavioral problems dealt with by social ecologists. Examples of behaviors discussed include mental health, overpopulation and resultant pollution, and drug abuse. The role of biological processes in these behaviors, and the relationship of a social ecologist to those behavioral problems.

100 Introduction to Social Ecology (1)
A concentrated survey of community problems conducted through presentation of the field study areas. Prerequisite: Entrance into the Program with upper-division standing; not open to students who have taken 1A-B-C.

101 Ethics of Behavior Modification (1)
An examination of the ethical issues of using behavior modification to change individual human behaviors, including voluntary versus involuntary treatment; explicit versus disguised therapist-patient contracts; and deliberate versus nondeliberate conditioning.

102 Ethics of Social Control (1)
An examination of the issues of morality arising when society attempts to control human behavior, including "the freedom ethos and social control," "the legitimacy of power over others," and "some kinks in the application of otherwise amoral rules."

103A-B-C Social Implications of Computing (1-1-1)
This course explores what attributes of the computer give it its awesome potential, several kinds of social activities to determine how they might change, and the desirability of such changes. A practical knowledge of computing would be helpful.

104A-B-C Varieties of Human Sexuality (1-1-1)
An interdisciplinary course designed to acquaint the student with the complexity of human sexuality as seen by sociology, biology, psychology, psychobiology, theology, criminology, philosophy, physiology, social science, anthropology, art, and literature.

105 Science and Ethics (1)
Same as Soc. Sci. 192R. 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. Each topic focuses on establishing the determinants of our present moral values.

106 Science and Public Policy (1)
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).

107 Biology and Public Policy (1)
Same as Bio. Sci. 184. Lectures and discussions of the relation between biology and biological scientists, and the formulation and execution of public policies. Prerequisite: One year of biology or social science or permission of instructor.

108 Toward a Unified Science of Man (1)
An interdisciplinary study of the properties of ecosystems, general systems, and dialectical systems as they contribute to a unified science of man. Particular emphasis on the basic inter-relations between the three theories as they overlap and complement one another.

109 Generation to Generation (1)
A mutual exploration between business and civic leaders and students of the other generation's viewpoints on major social-economic problems. Emphasizes one-to-one dialogue and provides a convenient vehicle for continuing communication.

112 Role of Mass Media of Communications in Society (1)
An investigation into the role of the mass media of communications with special emphasis on television. How the media take their character from society, influence society, and deal

with the problems of social ecology. Emphasis on the effectiveness with which the public is informed about social and environmental problems.

113 Survey of New Therapies (1)
An overview of such new approaches to counseling, psychotherapy, and facilitation of individual growth as Transactional Analysis, Rational Psychotherapy, Bioenergetics, Gestalt Therapy, Psychotherapy by Computer, and Implosive Therapy. Some effort will be devoted to the analysis of factors that differentiate between social technologies of lasting import and those of temporary impact.

114A-B-C Social Evolution of the Family (1-1-1)
Exploration of the changing structure and function of the American family, progressing from a cross-cultural and historical analysis of the development of the family to a discussion of alternative modes of individual and community organization. Analysis of elements of utopian traditions to help explore the limits and potentialities of these alternative modes. The changing roles of women, children, and work as they affect the family, sexual identity, and community stability.

115 Survey of Clinical Psychology (1)
An overview of the field of clinical psychology including a historical view of the role of the clinician; study of controversial issues in the field; 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.

116 Drug Use in America (1)
A survey of drug use and abuse in the United States. Examination of the use of depressants, stimulants, tranquilizers, food additives, nostrum medicines, the "pill," psychedelics, and other drugs. The examination will be done from many different perspectives, including legal medical, social, historical, economic, and cultural aspects.

117 Disorders of Behavior (1)
A survey of the characteristics of various types of behavior disorders and the methods used to alleviate or treat or deal with these disorders. Cultural, genetic, and biochemical bases of deviant patterns are discussed and evaluated. Emphasis upon the interaction among the social, legal, and medical components of disordered behavior and society's reactions to its manifestations.

118 Principles of Prevention in Mental Health (1)
Survey of various theories concerning the prevention of mental illness at three preventative levels: Primary prevention (to reduce the incidence of illness); Secondary prevention (to reduce the duration and extent of illness); and Tertiary prevention (to reduce the debilitating effects of illness).

119 Community Mental Health: Organization and Legislation (1)
The current structure and function of community agencies will be explored and related to recent legislation regarding mental illness and mental retardation. Emphasis on the implications of recent legislation and current practices for direct mental health services to selected subcultures such as the poor. Manpower needs and future strategies.

120 Methods of Behavior Modification (1)
A series of presentations of ongoing programs using behavior modification. Behavioral modification techniques are derived from psychological theories of learning and emphasize reinforcement and modeling. The techniques are applied in schools, clinics, homes, and hospitals.

121A-B Adolescent Development (1-1)
An investigation of the biological, psychological, and cultural aspects of human development between the ages of 12 and 18 years. Historical and cross-cultural perspectives will supplement views of contemporary adolescent problems.

122 Death and Dying in America (1)
This seminar will explore, primarily by means of student papers, intra- and interpersonal attitudes toward death and dying and current practices among health and mental health professionals in the management of terminal illness or injury in the American culture.

123 Psychotherapeutic Techniques (1)
Introduction to the terms, theory, and practice of psychotherapeutic techniques. A strong biographical emphasis based on the belief that theories of the psychotherapist are the result of the personality and experience of the individual theorist-therapist.

124 Behavioral Assessment (1)
Laboratory-seminar, exploring various methods of observing and recording the behavior of young children. Focuses on the development of observational skills and the application of assessment techniques in intervention and research programs.

125 Behavior Therapy and Beyond (1)
Successful behavior therapy requires a broad spectrum approach which extends beyond simple stimulus-response formulations. This advanced seminar explores innovations in behavioral assessment, cognitive restructuring, role playing, etc. Focuses on the theory, research, and application of techniques of behavior change which emphasize cognitions and individual differences.

126 Therapies with the Developing Child (1)
The importance of developmental maturational variables in the assessment and treatment of children's psychological problems. Family, peer-group, and individual modalities in inpatient and outpatient settings discussed within the framework of a variety of psycho-dynamic and behavioral theoretical frameworks.

127 Peer Counseling: A Case Study Approach (1)
Reading and discussion of college students' descriptions of their adolescent experiences offer a variety of perspectives on psycho-social development. Role-playing activities enable class members to test their abilities as peer counselors.

128A-B Behavioral Intervention with Children (1-1)
Each student will conduct a behavioral intervention program with a child in a school, hospital, or home setting. Emphasis will be placed on in-depth specification, application, and evaluation of the principles and procedures of behavioral change *in practice.*

129 Atypical Child Development (1)
Exploration of theories and research pertaining to mental retardation, cultural and socio-economic differences, behavior disorders, and learning difficulties in children. Developmental processes, current controversies, and strategies for research and policy.

131 Air Pollution (1)
Legal, political, economic, and social aspects of air pollution, studying the air quality legislation on the federal, state, and local levels.

132 Effects of Air Environment (1)
Extensive studies of interactions between man and his environment have established that behavior is very sensitive to changes induced by external environmental factors in the body's internal chemical milieu. This course examines 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 Environmental Quality and Citizen Action (1)
A review and analysis of methods used by citizens, both individually and in groups, to enhance and maintain the quality of the physical environment. The case study method is used with both historical and contemporary examples. Emphasis upon identifying the most effective methods, comparing these with theory, and attempting to develop new methods.

134 Environmental Quality and the Future (1)
Environmental quality implications of the forecasts appearing in the rapidly increasing quantity of futurist literature. Emphasis upon studying the differences between desirable goals and the projected endpoints of present trends.

135 Dynamics of Human Populations (1)
The main principles and concepts related to populations, including natality, mortality, natural increase, emigration and immigration, age distribution, biotic potential, carrying capacities and optimum population levels, fluctuations in and regulation of population densities.

Various computer models of population dynamics will be demonstrated and operated during the laboratory periods. Prerequisite: Soc. Ecol. 9 or equivalent.

136 Environmental Education (1)
This course is a survey of the materials appropriate for various environmental educational programs in both schools and community groups. In addition, local and national trends are discussed.

137 Noise Pollution (1)
Same as Soc. Sci. 186R. 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.

138 Human Evolution (1)
Survey of human evolution from the primate stage to the present, including primate, hominoid and hominid evolution, various forms of *Homo*, cultural developments, settlement origins and society evolution. Emphasis on cultural evolution in terms of environmental influences. Prerequisite: Soc. Ecol. 9 or its equivalent.

141A-B-C Barriology (1-1-1)
The purpose of this course is to orient, familiarize, and re-educate the students with the problems of the barrio and how to relate to its people. It will be divided into three consecutive quarters, the third being field work.

142 Employment/Unemployment – Myth and Reality (1)
The theoretical and practical consequences of manpower policies in the U.S., emphasizing socio-economic and political impacts of unemployment and the comparative value of various methods of achieving full employment.

143 Planned Social Change (1)
Introduction to ways of analyzing and acting on public policy issues, including governmental as well as voluntary group action. It represents alternative methodologies of public concepts, methods, and processes essential for effective action. The student will learn about public policy planning and action through project-oriented investigation.

144 The Effective Volunteer: Training for Careers in Community Service (1)
A course designed to enhance the student's potential for qualified volunteer experience by providing training in such skills as communication; organizational and leadership development; decision making; budgeting; programming; recruitment, motivation, and supervision; community organization and relations.

146 Special Problems in Minority Tutoring (1)
Students will compare and contrast the compensatory educational techniques designed by various California junior colleges, state colleges, and universities. Special emphasis will be placed on the various techniques tutoring programs have had with minority and/or low-income students. May be repeated.

148 Sexual Revolution and Social Change (1)
An examination of the origins, significance, nature of the so-called "sexual revolution" of the 1960's as it impedes, accelerates, or by its very nature requires social change in basic institutional structures such as the family, community, and state.

150 Love Against Death: Judeo-Christian Tradition (1)
A study of man's attitude toward and behavioral response to the reality of suicide, terminal illness, violent death, and American funeral practice in the context of the Judeo-Christian tradition.

151 Man's Quest for Immortality (1)
The concept of a much-extended life on earth will be analyzed to see what benefit and detriment will be gained by the individual, and society as a whole, should an indefinite life on earth be achieved by biological methods currently foreseeable.

168 The Consumer and the Law (1)
A brief history of the law relating to consumer remedies and products liability. Detailed analysis of the scope of the problem with special emphasis on the impact this aspect of the law has upon society, the consumer, the manufacturer, and the poor.

170 The Role of the Police in our Changing Society (1)
The history and philosophy of the police organization and administration with special emphasis on the impact of society on the role of the police during the past fifteen years. Examination of the influence of our changing society on role of the police, noting major changes since the Cahan decision in 1955.

171 Prisons, Punishment, and Corrections (1)
A review of the history and present conditions regarding treatment of law violators. The conflict among rehabilitation, vengeance, and deterrent principles. Analysis of civil rights, racial antagonism, and politicalization in the contemporary American correctional system.

172 The Police (1)
A social-psychological study of the police. A review of all perspectives on the police position and its problematical public posture.

173 Constitutional Law and Individual Rights (1)
Significant U.S. Supreme Court decisions which have been rendered in the last fifteen years in the area of constitutional law with reference to general community problems, individual problems, and individual rights.

174 Police-Community Interaction (1)
A consideration of the role of police in a democratic society, including issues such as policing the ghetto and campus, corruption, centralization, violence and disruption. Police agencies will be examined as a part of criminal justice, legal, governmental, and political systems.

175 Why Police? (1)
This course provides the framework for an examination of the necessity of law enforcement and police in complex, industrial societies.

176 Crimes Without Victims (1)
An examination of five criminal offenses in which there are apt to be no complaining witnesses – homosexuality, abortion, possession of narcotics, prostitution, and gambling. Implications of the use of criminal law to control these behaviors in terms of the individuals involved in the offenses, other persons, and the society in general; various alternative social policies are reviewed and evaluated.

177A-B Forms of Criminal Behavior (1-1)
"Crime in the streets" and "crime in the suites" have aroused public concern. Political agitation surrounds crimes of violence; reformers demand equivalent sanctions against the white-collar criminal. An examination of the causes, the extent, and the response to different forms of criminal behavior, emphasizing corporate offenses, crimes of violence, and professional crime.

178 The Philosophy of Law and Order (1)
An examination of the current public concern for "law and order," the various expressive public forms the philosophy takes, and its effect on the criminal justice system.

179 Liberty in Conflict (1)
Combines legal, historical, administrative, and economic perspectives on controversial issues more commonly discussed in sociological terms. There are three basic units: freedom of expression, social control, and groups in conflict.

180 Criminal Trial (1)
The background and evolution of the trial, the roles of the judge, prosecuting and defending attorneys, defendant, and jurors; a brief outline of the legal processes prior to the trial, the steps necessary in order to put the trial in its proper perspective, and the post-trial process. An analysis of actual criminal trials being held locally. Basically designed to teach an understanding of the concepts of the criminal trial.

181A-B Behavior of Children I & II (1-1)
Same as Soc. Sci. 184. A laboratory/lecture course on the growth and development of children ages 2-7 years. Main focus is on observing, recording, and understanding the ordinary behavior of children in group situations, and the theory of culture acquisition.

183 Behavioral Intervention in the Classroom (1)
An exploration of behavioral interventions that can be implemented by teachers or parents

with children evidencing behavior problems in the classroom or home. Some interventions covered will be those designed to treat hyperactivity, depression, lack of self-confidence, rebellion, cheating, and teacher dependence.

185 Creative Learning in Children (1)
Same as Soc. Sci. 181. Students will assist in the teaching of children at the Social Science Farm School and in developing materials for use in the school.

187A-B-C Models of Educational Systems (1-1-1)
The composition of this course will be modeled after the higher echelon offices of the Santa Ana School District. Within this model, students will evaluate motivational effectiveness, instructional effectiveness, and cost effectiveness.

198 Directed Group Studies on Special Topics (1)

199 Individual Study (1)

Field Studies: Open to upper-division majors ONLY.

197D Community Mental Health
Prerequisite: Soc. Ecol. 6.

197E Behavior Change
Prerequisite: Soc. Ecol. 2.

197F Environmental Quality and Health
Prerequisite: Soc. Ecol. 3.

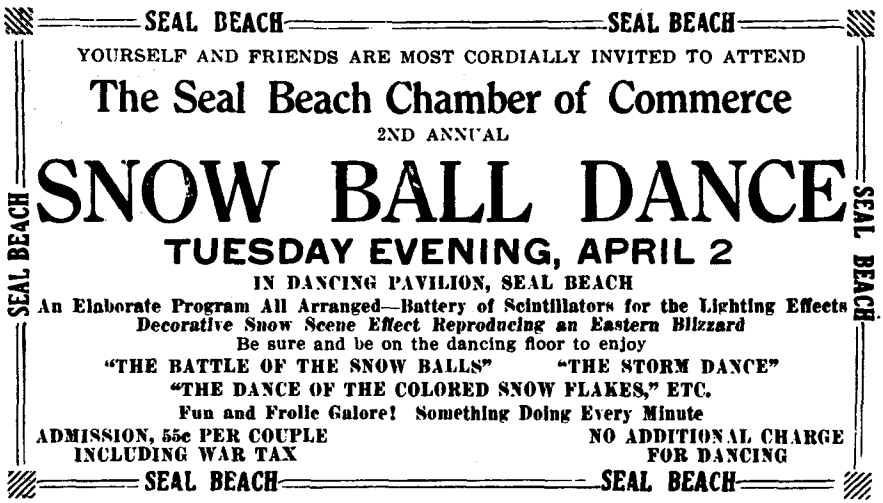
197G Social Change
Prerequisite: Soc. Ecol. 4.

197H Urban Systems/Regional Planning
Prerequisite: Soc. Ecol. 5.

197I Criminal Justice
Prerequisite: Soc. Ecol. 7.

197J Educational Policy and Institutions
Prerequisite: Soc. Ecol. 8.

197K Human Ecology
Prerequisite: Soc. Ecol. 9.



Invitation to the second annual Snow Ball Dance, Seal Beach, 1918.

SEPARATE PROGRAMS

UNIVERSITY STUDIES

Contemporary university faculties are composed of specialists – it is unlikely that they could do their jobs if they were not. But many academic specialists have a particular interest in how their chosen disciplines relate to other academic fields, to contemporary society, and to the broad intellectual and social issues of the day. With respect to any area of specialized study there are basic questions of theory and ethics: there are implications for the future of society and for the future of the discipline itself. It is important that these implications be made explicit and that opportunity be provided within the University curriculum for their study and contemplation. No one should assume that what he is studying at the moment or what he expects to study as his undergraduate major is unrelated to other disciplines of the academic community. Students should have the opportunity to examine intellectual endeavors other than their own and to learn something of the relevance of these endeavors to their own lives. The courses offered in the University Studies Program have been designed with this goal in mind.

The University Studies Program at Irvine was instituted by a vote of the local Academic Senate in the spring of 1967. It is administered by an organization of Senior Fellows composed of 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.

Only one course in the University Studies Program may be counted for credit toward the Bachelor's Degree.

SENIOR FELLOWS

Nelson C. Pike, Ph.D. Harvard University, *Professor of Philosophy (Chief Senior Fellow)*
Louis Gottschalk, M.D. Washington University, *Professor of Psychiatry*
Alexei A. Maradudin, Ph.D. University of Bristol, *Professor of Physics*
Jay Martin, Ph.D. Ohio State, *Professor of English and Comparative Literature*
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. A University Studies brochure listing all courses and a full de-

scription of each will be available by the first of September. One course credit (4 units) is granted.

University Studies I (Fall)

Section 1. Transportation Mr. Arthur
The history and future trends of the many modes of transportation designed by man. Required energy, cost safety, and environmental implications will be analyzed. Instructor's field: Engineering.

Section 2. The Computer in Teaching Mr. Bork
The design and use of computers as aids in classroom teaching. Instructor's field: Physics.

Section 3. Human Communication Mr. Degerman
A seminar on communications which explores some of the different ways in which messages and meanings may be conveyed effectively. Some of the more important modes of communication are considered, and potential barriers to effective communications are pointed out and discussed. Instructor's field: Psychology.

Section 4. Pollution, Physics, and Politics Mr. Evans
A study of the scientific, economic, and political aspects of environmental problems such as air and water pollution, radiation hazards, solid waste disposal, and urban noise. This study will include a critical examination of existing laws and governmental structures relating to environmental pollution. The responsibility of the scientist will also be discussed. Instructor's field: Physics.

Section 5. The Rhetoric of Advertisement Mr. Gelley
We shall interpret a number of contemporary advertisements (drawn primarily from magazines) for the purpose of identifying and classifying implicit ideological patterns (value criteria, life styles, speech styles, etc.). In addition we shall attempt to characterize the total profile of certain magazines as they emerge from the interplay of editorial material and advertisements. Instructor's field: Comparative Literature.

Section 6. The Drive to Create Mr. Fridhandler
A study of the creative drives and energies in three very different but highly creative people: a biochemist, James D. Watson, co-discoverer of DNA structure (1953); a physician, Ignaz P. Semmelweis, discoverer of effective prevention of fatal child-bed fever (1847); and Charles Chaplin, greatest of the film comedians (from 1914 on). Instructor's field: Medicine.

University Studies II (Winter)

Section 1. Man's Use of Plants Mr. Bal
Man's dependence upon plants, vital and economic. Instructor's field: Developmental & Cell Biology.

Section 2. The Creative Experience Mr. Degerma
A seminar on the psychological determinants of creativity in art and science. Theories of creativity are examined and discussed in relation to several important areas of creative experience. Instructor's field: Psychology.

Section 3. Nietzsche Mr. Gros
We shall endeavor to see Nietzsche as a prophet; his intuitions (sometimes sublime, sometimes hysterical) enable him to realize how the problems and paradoxes of the nineteenth century would harden into the dilemmas of the twentieth. Instructor's field: English.

Section 4. Drama and Political Action Mrs. Hubert
A study of plays concerning political action: conspiracy, revolution, etc. Problems to be discussed: reasons for success or failure; concepts of heroism; stageworthiness. Instructor's field: French.

Section 5. Physics and Medicine in Antiquity Mr. Kotr
Ancient Greek theoretical physics and its influence upon contemporary medical schools. Readings in the works of Empedocles, Democritus, Hippocrates, Aristotle, and Galen. Instructor's field: Classics.

Section 6. The Making of Inventions Mr. Lehovec
The inventive process will be studied using case histories of great discoveries in modern solid state electronics: the transistor, solar battery, microcircuits, xerography, and others. Instructor's field: Electrical Engineering.

Section 7. Psychodrama Mr. Noble
Role playing will be introduced to the students. Techniques of soliloquy, self-presentation, self-realization, role-reversal, mirror and double techniques will be presented. Students will be expected to participate and then will be given an opportunity to analyze their productions. Instructor's field: Psychiatry.

University Studies III (Spring)

Section 1. Transportation Mr. Arthur
The history and future trends of the many modes of transportation designed by man. Required energy, cost safety, and environmental implications will be analyzed. Instructor's field: Engineering.

Section 2. New Orleans Jazz Mr. Bell
A study of the origins, nature, and impact of early traditional jazz through recordings of the Original Dixieland Jazz Band. Instructor's field: Graduate School of Administration.

Section 3. Paul and the Early Church Mr. Degerman
A seminar covering the growth of the early Christian Church under the influence of Paul. Critical reading of the major Pauline epistles, from a psychological point of view, will form the central focus for discussion. Instructor's field: Psychology.

Section 4. Joyce's *Ulysses* Mr. McMichael
An intensive study of James Joyce's *Ulysses*. An effort will be made to probe the texts of Joyce's classical work. Instructor's field: English.

Section 5. Government, Welfare, and the Economy Down Under Mr. McCulloch
19th and 20th century Australia and New Zealand have been considered laboratories of social, political, and economic experiment. The role of the state has probably been greater than in any other part of the non-Communist world. It will be studied under a wide variety of headings. Instructor's field: History.

Section 6. Hermann Hesse with Reason Mr. Lehnert
Close readings and discussion of *Under the Wheel, Steppenwolf, Death and the Lover (Narziss und Goldmund)*, and *The Glass Bead Game*. Development of basic concepts of literary interpretation like the difference between author and narrator, communications of author and reader, the "Message" and literary structure, and other structural considerations. Instructor's field: German.

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.

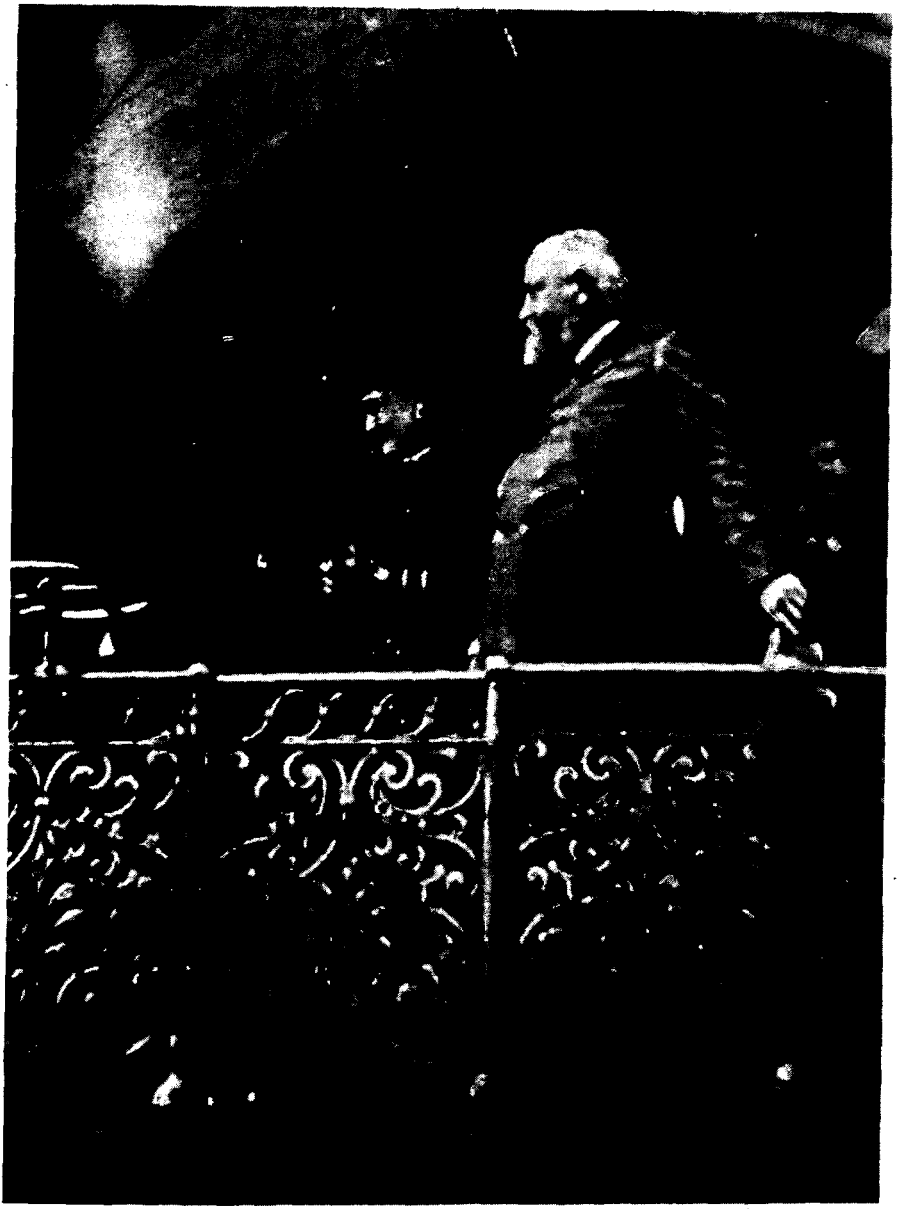
PHYSICAL EDUCATION FACULTY

Raymond H. Thornton, Ph.D. University of Southern California, *Chairman and Director of Athletics*
Gary Adams, M.A. University of California, Los Angeles, *Lecturer in Physical Education*
Larry S. Banner, M.A. California State, Long Beach, *Lecturer in Physical Education*
Thomas Cash, B.A. University of Oregon, *Recreation Sports Director*
Linda B. Dempsay, M.A. University of California, Berkeley, *Lecturer in Physical Education*
Robert G. Ernst, B.A. University of California, Irvine, *Lecturer in Physical Education*
Jerry C. Hulbert, M.A. Chapman College, *Lecturer in Physical Education*
Albert M. Irwin, B.A. College of the Pacific, *Assistant Director of Athletics*
L. Maxwell Lockie, Jr., B.E.E. Syracuse University, *Associate Development Engineer*
Myron C. McNamara, B.A. University of Southern California, *Lecturer in Physical Education*
Edward H. Newland, B.A. Occidental College, *Lecturer in Physical Education*
Michael A. Purcell, B.A. University of California, Irvine, *Lecturer in Physical Education*
Carl H. Reinhart, B.A. University of California, Irvine, *Lecturer in Physical Education*
Irwin Roberson, M.A. Whitworth College, *Lecturer in Physical Education*
Richard B. Sweet, B.A. University of California, Santa Barbara, *Lecturer in Physical Education*
Timothy M. Tift, M.A. Pepperdine College, *Lecturer in Physical Education*

COURSES IN PHYSICAL EDUCATION

1A-B-C Physical Education (1/6-1/6-1/6) F, W, S
May be repeated. Sections in archery, badminton, cross country, equitation and horsemanship, fencing, gymnastics, golf, handball, judo, life saving, sailing, scuba diving, swimming, tennis, track and field, trampoline, volleyball, water polo, water safety instruction, individual exercise for women, and weight training.

Fishing from the wharf, Newport.



PROFESSIONAL EDUCATION

UC IRVINE - 1972-1973

Mass Meeting

End Poverty In California

Upton Sinclair

for

Governor

Club

Special Speakers

El Modena School House

East Building

Tuesday, May 8, 7:30 P.M.

Front: Commemorative photograph of President Harrison's visit to Santa Ana, 1891.

Back: Flyer from the Upton Sinclair for Governor Club, 1934.

SCHOOL OF ENGINEERING

Robert M. Saunders
Dean

The School of Engineering offers junior-senior and graduate programs of study for men and women who will engage in the professional practice of engineering primarily as it relates to design, development, research, and teaching, in industry, government, or a university. Programs at all levels emphasize the fundamentals underlying engineering so as to facilitate future maintenance of engineering competence by either formal or informal study. Thus programs of study in the School of Engineering endeavor to provide UCI graduates with adequate intellectual tools to enter the profession (after a short internship) and also provide for the continued updating of their technological knowledge.

At the undergraduate level a single program in Engineering is offered with options in Civil and Environmental, Electrical, Mechanical, and General Engineering. A multiple major in Environmental Management is also available with the Schools of Biological Sciences and Social Sciences. The Engineering program is designed to maximize the freedom of choice while at the same time being sufficiently structured so as to provide a sound base in Engineering. In general each student will devote approximately 40% of his time over the four years to the scientific and mathematical backgrounds pertaining to the various engineering fields; the purpose of this intense study of the sciences and mathematics is to make sure that graduates are well grounded in the laws and constraints of logic and nature. Another 20% of the program will be assigned to the study of the fine arts, humanities, and the social sciences. The remaining 40% will comprise engineering subjects.

At the graduate level, programs of study become less rigidly structured and specialization becomes more intense. The M.S. program requires nine courses to be completed, but the exact choice of the courses will be a matter of negotiation between the student and his faculty advisor. Thesis or non-thesis programs are available. At the Ph.D. level the program is still less structured but more specialized than at the M.S. level. No courses are required; rather students must demonstrate various competences as they progress toward the completion of their doctoral programs.

Accreditation of engineering programs in the U.S.A. is by the Engineers Council for Professional Development. To date the undergraduate electrical option has been so accredited by the ECPD; accreditation of other options will be sought as soon as they have graduates.

Uniquely Engineering student organizations are the Dean's Cabinet and the Engineering Society of UCI (ESUCI). All Engineering students are eligible to be members of the Dean's Cabinet. Composed of students representing all academic levels from freshman through graduate, the Cabinet provides a direct communication link between the students and the Dean. The Cabinet in turn appoints a Committee on Committees which selects students to participate on the committees of the School

of Engineering. Whereas the Dean's Cabinet pertains mainly to academic matters, the ESUCI is professional in nature having ties locally and nationally with the engineering profession through its organizations.

All faculty and committee meetings (except those involving personnel considerations) are open meetings; in addition to designated student representatives, all students are encouraged and expected to participate in the development of School policy. Student evaluation of the quality of courses is made annually and both students and alumni make in-depth evaluations of faculty members being considered for promotion or other special actions.

Degrees Offered in the School

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

Honors are awarded to outstanding graduating Engineering students.

UNDERGRADUATE PROGRAMS

The undergraduate program leads to a B.S. degree with an option in Civil and Environmental Engineering, Electrical Engineering, Mechanical Engineering, General Engineering, or Environmental Management. The program is designed to provide a firm background in the basic sciences, through the required courses in physics, mathematics, biology, and chemistry, and a fundamental understanding of the engineering sciences, through the required engineering courses, as well as some specialization via technical electives.

Admission

High school students wishing to begin their engineering programs at UCI should seek admission to the Irvine campus of the University of California designating Engineering as their intended major. Upon registering, a student will be assigned an engineering advisor who will assist in developing a satisfactory program of study and provide the requisite advice for the development of a coherent program of study.

Transfer students are admitted to the School of Engineering upon completion of a freshman-sophomore program in another school at Irvine or at another college, including community colleges. Students seeking admission to the School of Engineering from colleges and schools other than UCI must satisfy the University requirements for admission to advanced standing and must have completed the specific prerequisites for the junior courses to be undertaken in the School of Engineering.

Students meeting the Community College-State College-University compact of 1965 on lower-division requirements may complete the requirements for the B.S. degree in six quarters assuming normal progress.

Requirements for the Bachelor's Degree

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

School Requirements

Credit in 45 courses in one of the options listed in the following table. Variations from these requirements may be made subject to the approval of the appropriate Board of Study. A minimum grade of C must be earned in each core course: Engr. 100A-B-C, 101A-B-C, and 105A-B-C.

Subject	Civil and Environmental Option	Electrical Option	Mechanical Option	General Option
Math (6 courses)	Math. 2A-B-C, Math. 3A-B-C			
Computer Science (1)	Information and Computer Science 1			
Basic Science (8)	8 courses from Phys. 5A-B-C-D-E, Chem. 1A-B-C, or Chem. 51A-B-C	Physics 5A-B-C-D-E		
		Chem. 1A-B-C		Chem. 1A-B-C or Bio. Sci. 1A-B-C
Engr. (15)	Engr. 100A-B-C, 101A-B-C, 105A-B-C			
	Engr. 150A-B, 155, 161, 163, 164	[c]6 courses	Engr. 150A-B, 147, 155, 170, 171	6 Engr. courses
[a]Technical Electives (3)	3 courses	[c]3 courses	3 courses	3 courses
Breadth (9) courses	[b]HSSFA (6) Bio. Sci. (3)	[b]HSSFA (9)	[b]HSSFA (9)	[b]HSSFA (9)
Free Elec. (3)	Any 3 courses except Physical Education			

[a] Technical electives are defined as upper-division courses in Engineering, Mathematics, Physics, Chemistry, Computer Science, and Biological Sciences.

[b] HSSFA – Six courses from one school, such as Humanities, Social Sciences, or Fine Arts. If more than 6 courses are required, they must be chosen from a different breadth school.

[c] At least 5 but no more than 7 courses satisfying the Engineering and Technical elective requirements must be selected from one of three groups as follows: Systems Engineering and Operations Research Engineering – 110A-B-C, 115A-B-C, 116, 117, 118A-B-C, 119A-B-C, 135A-B-C, 140, 141, 142, 143A-B-C, 145, 186, 187, 188. Information Engineering – 122, 123A-B, 124A-B, 186, 187, 188. Electronics Engineering – 110A-B-C, 112, 113A-B, 114A-B-C, 136, 137, 138, 139, 170, 186, 187, 188.

In addition to the options given in the table, the School of Engineering jointly offers with the School of Biological Sciences and the School of Social Sciences a program in Environmental Management requiring 48 courses. For further information contact the Student Affairs Office, School of Engineering.

The School of Engineering is also participating in a joint program in Perception and Recognition.

Programs of Study

Students are free to follow any schedule of courses in the program they feel is meaningful to them, but they should complete the requisite physics and mathematics for admission to junior courses in engineering and meet the graduation requirements of the School of Engineering at the end of their allotted collegiate period. Normally a student will wish to complete the science requirements, the digital computing course (Information and Computer Science 1), and some of the courses required in fine arts, humanities, and social sciences in the freshman and sophomore years. Typical programs in the several areas of concentration are available upon request to the Student Affairs Office, School of Engineering.

Students in the School of Engineering should bear in mind the general campus policy which permits them to take courses in areas outside their major, or outside their school, on a "Pass/Not Pass" basis. With respect to programs in engineering, such areas are fine arts, humanities, and social sciences and any course not being submitted as fulfilling the graduation requirements.

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 alone are responsible for the planning of their own programs and for satisfactory completion of the graduation requirements. However, the faculty stand ready to give every assistance and necessary advice in the planning of programs. A student may substitute courses of his choosing for those required if he can substantiate the merits of his academic plan and obtain the approval of the Faculty of the School.

Proficiency Examinations

A student who thinks himself sufficiently proficient in the subject matter underlying a specific course in the School of Engineering to receive credit without formal enrollment in that course may consult with the instructor of that course to explore what he must do to demonstrate his proficiency and gain credit. Normally, his ability will be demonstrated by a written or oral examination; if a portion of his capability involves laboratory exercises, he may be required to perform experiments as well as to take a written examination. Normally, these examinations (written, oral, or laboratory) will be given at the opening of each quarter in which the specified course is offered. All courses in the School are available for such proficiency demonstrations.

GRADUATE PROGRAMS

Graduate study in the School of Engineering permits specialization in a particular area while at the same time developing breadth. Graduate study toward the M.S. and Ph.D. degrees is applied science oriented and will provide an excellent base for future professional growth through understanding of the basic phenomena associated with the student's chosen field.

Admission

Admission to graduate standing in the School of Engineering is generally accorded those possessing a B.S. degree in engineering or an allied science obtained with an acceptable level of scholarship from an institution of recognized standing. Those seeking admission without the requisite scholarship record may, in some cases, undertake remedial work; if completed at the stipulated academic level, they will be admitted to full graduate standing. The aptitude section of the Graduate Record Examination is required.

Master of Science in Engineering

Those wishing to pursue graduate work in the area of electrical engineering will find programs in control systems, optimization theory, operations research, communication and information theory, pattern recognition, optical systems, and quantum electronics. In the environmental engineering area there are programs in water quality, hydraulics, hydrology, air pollution, and environmental management.

For the M.S. degree with thesis, nine courses are required, of which at least six are graduate level courses; a maximum of two research courses may be submitted. For

the M.S. degree without thesis, nine courses will be required, of which at least six are graduate level and may not include research credit. The M.S. thesis must demonstrate the student's capability of undertaking an original study and carrying it through to a conclusion satisfactory to at least three members of the faculty. For those students electing to study for the M.S. without thesis, a comprehensive exercise demonstrating familiarity with a broad aspect of the field of engineering in which they are majoring will be required. Master of Science programs must be completed in four calendar years from the date of admission.

The detailed program of study is worked out with an advisor who takes into consideration the objectives of the candidate, his preparation, and the specific and implied requirements of the School. Part-time students generally will be limited to one course per quarter if fully employed, and those holding research or teaching assistantships normally will not be permitted a full three-course load. Engineers in industry may find it convenient to complete some courses in University Extension. Upon petition to the School, courses taken on another campus of the University will be accorded full credit if taken after admission to Irvine; up to three courses will be credited upon admission if taken in Extension or on another campus of the University, or in another university.

Doctor of Philosophy in Engineering

The doctoral program in engineering leading to the Ph.D. is tailored to the individual needs and backgrounds of the student. There are no specific course requirements but rather several milestones to be passed: admission to the Ph.D. program by the Faculty of the School; passage of the preliminary examination assessing the student's background and his potential for success in the doctoral program; satisfaction of the teaching requirements required of all doctoral students; research preparation; and 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

Robert M. Saunders, Dr. Eng. Tokyo Institute of Technology, *Professor of Electrical Engineering and Dean, School of Engineering*

Paul D. Arthur, Ph.D. California Institute of Technology, *Professor of Aerospace Engineering and Associate Dean, School of Engineering*

Casper W. Barnes, Jr., Ph.D. Stanford University, *Professor of Electrical Engineering*

Neil J. Bershad, Ph.D. Rensselaer Polytechnic Institute, *Associate Professor of Electrical Engineering*

Richard R. Brock, Ph.D. California Institute of Technology, *Assistant Professor of Civil Engineering*

Ralph B. Conn, M.S. University of Southern California, *Lecturer in Electrical Engineering*

Byron N. Edwards, Ph.D. University of California, Berkeley, *Lecturer in Electrical Engineering*

Hideya Gamo, D.Sc. University of Tokyo, *Professor of Electrical Engineering*

Warren A. Hall, Ph.D. University of California, Los Angeles, *Professor of Civil Engineering*
Albert S. Jackson, Ph.D. Cornell University, *Lecturer in Electrical Engineering*
Robert C.K. Lee, Sc.D. Massachusetts Institute of Technology, *Associate Professor of Aerospace Engineering*
K. Lehovec, Ph.D. Charles University, Prague, *Adjunct Professor of Electrical Engineering*
L.M. Lockie, Jr., B.E.E. Syracuse University, *Lecturer in Electrical Engineering*
James S. Meditch, Ph.D. Purdue University, *Associate Professor of Electrical Engineering*
Lester Mintzer, M.S. Ohio State University, *Lecturer in Electrical Engineering*
Theodore Nieh, Ph.D. University of California, Los Angeles, *Lecturer in Electrical Engineering*
Charles G. Pardoen, Ph.D. Stanford University, *Lecturer in Civil Engineering*
John G. Rau, M.A. University of Washington, *Lecturer in Electrical Engineering*
William T. Rhoades, M.S. Massachusetts Institute of Technology, *Lecturer in Electrical Engineering*
William H. Roberts, M.S., E.E. University of California, Berkeley, *Lecturer in Electrical Engineering*
G. Scott Samuelsen, Ph.D. University of California, Berkeley, *Assistant Professor of Mechanical Engineering*
Jan Scherfig, Ph.D. University of California, Berkeley, *Associate Professor of Civil Engineering*
Roland Schinzinger, Ph.D. University of California, Berkeley, *Associate Professor of Electrical Engineering* (on leave 1972-73)
Jack Sklansky, Eng. Sc.D. Columbia University, *Professor of Electrical Engineering and Information and Computer Science* (on leave 1972-73)
Allen R. Stubberud, Ph.D. University of California, Los Angeles, *Associate Professor of Electrical Engineering*
Philip R. Westlake, Ph.D. University of California, Los Angeles, *Lecturer in 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 systems which can be described by total differential equations. Rigid body mechanics, electrical networks, pneumatic devices, and hydraulic elements. Prerequisites: Physics 5C, Mathematics 3C, Information and Computer Science 1 (may be taken concurrently).

101A-B-C Continuous Media and Fields (1-1-1) F, W, S
Scalar and vector fields and methods of solving boundary value problems. Examples are drawn from electromagnetic, heat conduction, and fluid fields. Prerequisites: Physics 5E, Mathematics 3C.

105A-B-C Engineering Measurements (1-1-1) F, W, S
Experimental procedures, including instrumentation, measurements, simulation, modeling and design. Prerequisites: Engr. 100 and 101 (may be taken concurrently).

110A-B-C Electronics (1-1-1) F, W, S
Application of semi-conductor devices. Design of amplifiers and digital switching circuits. Use of linear and digital integrated circuits. Prerequisite: Physics 5D.

112 Semiconductor Technology (1) S
Crystal growth, liquid and gaseous epitaxy; doping by gaseous diffusion, alloying and ion implant; oxide growth; photoresist technique; contact and junction preparations; measurements of conductivity, Hall effect, minority carrier life time, surface state density. Laboratory work and application to device design.

113A-B Digital Electronics (1-1) F, W
Concepts of decision elements. Monolithic and hybrid circuit design, processing, fabrication, and layouts. Bi-polar and MOS logic circuits, semi-conductor memories, CORE storage, and CAD analysis. Prerequisites: Engr. 110A, 122. Offered in 1973-74.

114A Fundamentals of Physical Electronics (1) F
Material science with emphasis on semiconductors; crystal lattices, lattice defects and impurities, electronic energy states, electron distribution in thermal equilibrium and under external perturbations.

114B Field Effect Devices (1) W
Semiconductor devices: Schottky barrier and p-n junction capacitors, electro-optical modulators, junction-field effect transistors, insulated gate field effect transistors, charge coupled devices and semiconducting memories. Prerequisite: Engr. 114A.

114C Bipolar Semiconductor Devices (1) S
Semiconductor devices based on minority carrier flow; p-n junction diodes, Impatt and tunnel diodes, bipolar transistors, four layer diodes; opto-electronic devices. Prerequisite: Engr. 114A.

115A-B-C Systems Engineering (1-1-1) F, W, S
The systems engineering process and its interface with operations research. Emphasis placed upon those mathematical optimization techniques and probability theory concepts which find application during the design, development, and evaluation of systems. Prerequisites: Engineering 187, 188, or Mathematics 130A-B-C. Offered in 1973-74.

116 Engineering Economy (1) F
Economic analysis of engineering projects and alternatives; utility and decisions; time cost of money. Long range planning in the private and public sectors. Optimal resource allocation. Case studies. Offered in 1973-74.

117 Mathematical Methods of Systems Reliability (1) F
Statistical and probabilistic aspects of reliability engineering. Discussion of series, parallel and combination systems. Majority voting, redundant codes, adaptive schemes and redundancy in digital systems. Reliability models and statistical parameter estimation. Analysis of multi-mode systems with drift, marginal, catastrophic failures. Prerequisite: Engr. 186. Offered in 1973-74.

118A Deterministic Models in Operations Research (1) F
Optimization of deterministic systems. Formulation of models and applications. Linear programming and extensions.

118B Nonlinear and Multistage Models in Operations Research (1) W
Quadratic and nonlinear programming methods. Modeling of multistage processes and optimization by dynamic programming methods. Analytical and computational methods of solution.

118C Stochastic Models in Operations Research (1) S
Optimization of stochastic systems. Formulation and application of stochastic programming, probabilistic dynamic programming. Markov chains and waiting line models. Inventory models. Prerequisite: Engr. 186.

119A-B-C Power System Engineering (1-1-1) F, W, S
Generation, transmission, and use of electrical energy. Stability, reliability, economics, and optimal load flow. Prerequisites: Engr. 100 and 101. Offered in 1973-74.

122 Logic and Organization of Digital Computers (1) S
Digital computer organization. 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 Engineering (1-1) F, W
Machine language programming and systems programming from the point of view of the computer system architect. Addressing techniques, assembly systems, sorting and converting data, program segmentation and linkage, service programs, supervisors, schedules, and translators. Prerequisite: Engineering 122. Offered in 1973-74.

124A-B Introduction to Information Machines (1-1) F, W
Switching circuits for computers, representations (codes, geometric forms); implementation (switching networks, storage elements), and digital systems. Characteristics of combinatorial and sequential networks.

128 Communication Systems (1) F
A non-probabilistic introduction to analog and digital communication systems. Analog modulation and demodulation techniques. Digital signaling techniques (PCM) using pulse position, pulse-width, and pulse-rate schemes. Prerequisites: Engr. 100A-B-C.

135A-B-C Electromechanics (1-1-1) F, W, S
Theory and behavior of electromechanical devices used in systems of electrical power, conversion of power between electrical and mechanical systems, and as information processing devices. Prerequisites: For Engr. 135A, Engr. 101C; for Engr. 135B and Engr. 135C, Engr. 135A (note that 135B is not a prerequisite for 135C).

136 Engineering Electromagnetics (1) S
Fundamental concepts of electromagnetic fields and solutions of electromagnetic field problems are treated with emphasis on engineering applications: dielectric and magnetic properties of matter, impedance concepts, Fresnels formula, elemental concepts of guided waves, resonance cavities and radiation.

137 Engineering Electrodynamics (1) F
Time varying electromagnetic fields including waveguides, resonant cavities, and radiating systems. Motion of charged particles in electromagnetic fields, radiation by moving charges. Scattering and dispersion.

138 Optical Electronics (1) W
Lasers and related optical devices and systems: spontaneous and stimulated emission, optical spectra, optical resonators, laser oscillation, specific laser systems, dispersion and nonlinear processes in laser medium, crystal optics, modulation, isolator, optical harmonic generation, optical detection and related noise problems.

139 Laser Technology (1) S
Technology pertinent to lasers and related optical devices and applications. Laboratory work on lasers, interference, modulation transmission, detection, holography, and spectroscopy.

140 Continuous-Time Linear Feedback Systems (1) F
Analysis and design of continuous-time linear feedback systems. Modeling, stability criteria, and design specifications. Root locus. Nyquist, Bode, gain-phase and computer-aided techniques. Associated laboratory exercises. Prerequisite: Engr. 100C.

141 Digital Linear Feedback Systems (1) W
Analysis and design of digital linear feedback systems. Sampling, quantizing, and z-transform theory. Schur-Cohn and Nyquist stability criteria. Root locus, Nyquist, Bode, gain-phase, and computer-aided methods. Prerequisite: Engr. 140.

142 Vector Space Methods in System Analysis (1) S
Application of the theory of finite-dimensional linear vector spaces to the analysis of linear dynamic systems. Lyapunov stability theory, controllability and state variable feedback, observability and observer theory. Computer-aided analysis of linear systems and introduction to optimal control. Prerequisite: Engr. 141.

143A-B-C Simulation and Computation (1-1-1) F, W, S
Computers for modeling engineering systems and for simulation experimentation in systems engineering and operations research. Analog, digital and hybrid simulation systems, software and applications. Error analysis for analog, digital and hybrid simulations. Prerequisite: Engr. 100C.

145 Engineering Statistics (1) S
Introduction to Statistical Inference; Point Estimators. Bias, Sufficiency, Consistency; Interval Estimators, Confidence Intervals; Hypothesis Testing, Simple and Composite Hypotheses, Likelihood Ratio Tests; Regression; Nonparametric Methods; Sequential Tests; Applications to Engineering Problems. Prerequisite: Engr. 186. Offered in 1973-74.

146A-B Orbital Mechanics (1-1) F, W
Equations and concepts of celestial mechanics as applied to the orbits of space vehicles.

147 Engineering Mechanics (1) W
Rigid body dynamics. Nonorthogonal coordinates. Advanced methods in dynamics, generalized coordinates, Lagranges equation. Analysis of complex dynamical systems. Oscillations. Prerequisite: Engr. 100B.

150A-B-C Structural Mechanics (1-1-1) F, W, S
Analysis of beams, columns, trusses, and rigid frames. Design of steel and reinforced concrete structures. Ideal truss analysis, shearing force and bending moments for beams, deflection (due to axial, bending shearing, and torsional deformations), statically indeterminate structures.

155 Fluid Mechanics (1) F
Fluid mechanics with emphasis on incompressible fluids. Fundamental equations and conservation relations, stresses in fluids, similitude, potential flows, turbulence, laminar and turbulent boundary layers, creeping motion, separation wakes. Applications to pipe flow, open channel flow, and hydraulic models. Prerequisite: Engr. 101C.

156 Compressible Flow (1) S
Inviscid flow, Fanno, and Rayleigh flows. Acoustics, shock waves, linearized supersonic flows, nozzles and diffusers. Prerequisite: Engr. 101B.

161 Introduction to Environmental Engineering (1) F
Basic principles of population growth, meteorology, hydrologic cycle, components of water and waste systems, air and water quality, and public health in relation to environmental planning and pollution control.

162 Water and Waste Systems (1) W
Hydrology and fluid mechanics of water and wastewater collection and transmission systems. Prerequisites: Engr. 155, 161.

163 Water Pollution and Control (1) S
Chemical and biological aspects of water, water supply, wastewater treatment, and solid waste management.

164 Air Pollution (1) W
The formation, sources, control, effects, and social considerations of air pollution and control.

165 Environmental Engineering Aspects of Physical Chemistry and Thermodynamics (1) W
An introductory course for science and engineering majors in the application of chemical and thermodynamical principles to the solution of environmental problems with emphasis on air and water pollution. Prerequisite: Senior standing.

168 Legal, Socio-political, and Regulatory Aspects of Environmental Engineering (1) W
Study of the administrative and socio-political aspects of environmental quality.

170 Statistical Thermodynamics (1) W
Classical and quantum mechanical descriptions of substances and evaluations of thermodynamic properties of gases, liquids, and solids. Elementary kinetic theory of gases and evaluations of transport coefficients. Prerequisites: Physics 5 and Math 3.

171 Heat and Mass Transfer (1) S
Transport of mass and heat in both steady and unsteady flow systems, including mass diffusion and heat transfer in laminar and turbulent flow. Offered in 1973-74.

180 Biological Information Processing (1) F
Information processing in living systems. Applications of signal theory, set theory, commu-

nication theory, automata, information theory, and pattern recognition models to biological processes. Prerequisite: Math 2C.

185 Introduction to Engineering Analysis (1) F
Basic principles of engineering analysis with emphasis on differential equations — computer laboratory included.

186 Engineering Probability (1) F
Sets and set operations; nature of probability, sample spaces, fields of events, probability measures; conditional probability, independence, random variables, distribution functions, density functions, conditional distributions and densities; moments, characteristic functions; random sequences, independent and Markov sequences. Prerequisite: Math 3C or Engr. 100A (may be taken concurrently).

187 Random Processes and Systems Theory (1) W
Applications of the theory of random processes to the analysis of the response of linear systems, linear mean-square optimization, the orthogonality principle and Wiener-Hopf theory. Prerequisite: Engr. 186.

188 Random Processes in Nonlinear Systems (1) S
The application of diffusion theory to the representation and determination of the output processes of systems driven by independent increment processes. The interpretation of stochastic differential equations as integral equations defined in a mean-square sense. Prerequisite: Engr. 187.

198 Group Studies for Undergraduates (1) F, W, S
Group study of selected topics in engineering.

199 Individual Study (½ or 1) F, W, S
For undergraduate engineering majors in supervised but independent reading or research of engineering topics of current interest.

GRADUATE COURSES IN ENGINEERING

210 Imaging Optics (1) F
Optical imaging instruments from geometrical and wave optic standpoints. Indirect optical imaging methods such as holography, interferometry and intensity correlation interferometry.

211 Statistical Optics (1) W
Temporal and spatial coherence of electromagnetic radiation. Statistics of photoelectrons generated by thermal radiation and laser beams. Wave propagation through fluctuating medium. Signal-to-noise ratio in photodetection.

212 Engineering Quantum Mechanics (1) F
Basic quantum electronics for optical electronic devices. Offered in 1973-74.

213 Quantum Electronics (1) W
Semi-classical treatment of lasers and related optical electronic devices. Offered in 1973-74.

214 Quantum Optics (1) S
Quantum theory of electromagnetic field and its application to laser and related optical devices. Noise, photoelectron counting statistics, and intensity correlation interferometry. Offered in 1973-74.

218A Advanced Linear Programming and Extensions (1) F
Theoretical foundations of the simplex method and its variants. Duality relationships. Post-optimization techniques, upper bounding, and decomposition. Complementarity. Discrete programming. Applications and computer usage. Prerequisite: Engr. 118A.

218B Theory of Nonlinear Programming (1) W
Convex sets. Convex and concave functions. Constraints. Criteria. Conditions of optimality. Convergence criteria. Duality and transformations. Geometric programming.

218C Algorithms for Nonlinear Programming (1) S
Optimization methods for digital computers. Single and multivariable search techniques.

Gradient methods. Conjugate directions. Constrained optimization. Computational aspects. Applications to problems in design and control.

219A Production and Inventory Control (1) W
Optimal policies for multistage dynamic processes. Discrete and continuous time models. Deterministic and stochastic models. Exact solutions and heuristic methods. Applications.

219B Applied Stochastic Processes and Queueing Theory (1) S
Application of stochastic processes to the study of the characteristics of queueing and replacement models and their optimization. Prerequisite: Engr. 186.

221A-B Trainable Automata (1-1) W, S
Markov chain models of learning phenomena in pattern recognizing machines and human signal detection, train-work scheduling, single-operator model, convergence properties of training algorithms, training without a teacher, game-theoretic iteration; adaptive sample set construction; stopping rules, time-varying training procedures. Prerequisites: Math 130C or Engr. 187.

222 Statistical Pattern Classification (1) F
Design of machines to sort statistically generated observations into classes, such as speech, radio signals, and electrocardiograms. Techniques include decision theory, divergence, feature selection, cluster analysis and prototype decisions. Prerequisites: Math 130A-B-C or Engr. 186.

223 Image Processing by Computer (1) W
Theory and design of machines to analyze and process visual images. Spatial computers, two-dimensional digital filters, chain codes, distance skeletons, and slope density analysis of silhouettes, noise removal and image enhancement. Prerequisite: Engr. 122.

224 Picture Language Machines (1) S
The use of linguistic techniques for implementing picture analysis and recognition on computers. Topics include array grammars, phrase structured grammars, web grammars, graphs, and analysis of texture. Prerequisite: ICS 130B or Engr. 122.

227A-B Detection, Estimation and Demodulation Theory (1-1) F, W
Application of statistical decision theory, state variable theory, random processes and the Ito calculus to deriving optimum receiver structures for signal detection, parameter estimation and analog demodulation. Prerequisite: Engr. 187.

228A-B Communication and Information Theory (1-1) F, W
Communication over noise channels via optimum receiver design. Information theory concepts – entropy, mutual information, encoding of information. Shannon's coding theorems, channel capacity, and implementation of some coded systems. Prerequisites: Engr. 186, 187. Offered in 1973-74.

240 Optimal Control Theory (1) F
Formulation of optimal control theory for deterministic systems. Necessary and sufficient conditions for optimal control systems. Pontryagin's maximum principle. Dynamic programming. Prerequisite: Engr. 142.

241A Stochastic Control Systems (1) W
Second order random processes, Markov processes, shaping filters. Linear estimation theory, sequential estimation and estimation errors, error analysis. Discrete time and continuous time processes. Prerequisite: Engr. 186.

241B Stochastic Optimal Control (1) S
Nonlinear stochastic difference and differential equations, stochastic calculus, optimal Bayesian estimation and control, Fokker-Planck type equations for estimation and control. Prerequisite: Engr. 241A.

255A-B Hydrodynamics (1-1) W, S
Viscous and inviscid fluid motion. Laminar flow; Stokes and Oseen problems, boundary layer, diffusion of vorticity, laminar instability; potential flow, conformal mapping, surface waves, perturbation theory, jets, stability; turbulence, Reynolds stresses, turbulent boundary layer. Prerequisite: Engr. 155. Offered in 1973-74.

258A-B Flow in Open Channels (1-1) F, W
Fluid motion in open channels. Uniform and non-uniform flow, unsteady flow, method of characteristics, flood waves, roll waves, numerical methods, models, flow over movable beds, sediment transport. Prerequisite: Engr. 155. Offered in 1973-74.

263A-B-C Water and Air Resources Technology (1-1-1) F, W, S
Water, waste, and air pollution control. Flow through porous media. Dispersion and turbulent diffusion of pollutants. Physical, chemical, and biological treatment. Reuse of wastes. Ultimate disposal of non-reusable wastes. Prerequisites: Engr. 163, 164.

265 Water and Air Treatment Chemistry (1) F
Inorganic and organic chemistry of water, wastes, and air pollutants. Chemistry of natural waters, quality changes from contact with soil, supersaturation, phenomenons and complex equilibria chemistry of organic pollutants including pesticides and combustion products. Laboratory. Prerequisites: Chem. 1A-B-C, Engr. 161.

266 Public Health Aspects of Environmental Engineering (1) F
Public health aspects of water engineering. Aquatic microbiology. Virology. Bacteriological water quality standards. Water-borne diseases. Principles of epidemiology and toxicology. Airborne diseases. Prerequisites: Bio. Sci. 100A-B-C.

268A-B Environmental Resources Systems – Planning, Design, and Evaluation (1-1) W, S
Planning civil engineering systems. Optimization of integrated water reuse systems and transportation systems. Design criteria for public works. Economic evaluation of alternative systems. Prerequisites: Engr. 263A-B-C (may be taken concurrently). Offered in 1973-74.

270 Combustion (1) S
Atomic and molecular structure, reaction mechanisms and rates, chemical equilibria, flame temperatures, nonequilibrium phenomena, ignition limits, diffusion flames and droplet burning, premixed flames, spectral properties of flames, experimental techniques, combustors. Prerequisite: Engr. 263A. Offered in 1973-74.

285A-B-C Methods of Engineering Analysis (1-1-1) F, W, S
Operators in linear vector spaces as a general tool for the analysis of engineering systems. The course will develop a unified mathematical approach applicable to problems in all fields of engineering. Prerequisites: Engr. 100C, 101C.

286 Fourier Transform Methods (1) W
Fourier transform methods for the study of signals, systems, devices, and physical phenomena. Transform methods in one, two, and three dimensions with applications ranging from signal spectral analysis to wave and diffusion phenomena.

295 Seminars in Engineering (varies) F, W, S
Scheduled for 1972-73 are: (a) Engineering Instruction; (b) Mathematical Programming and Operations Research; (c) Quantum Electronics and Modern Optics; (d) Communication Theory; (e) Pattern Recognition; (f) Optics; (g) Engineering Analysis. Prerequisite: Consent of instructor.

298 Topics in Engineering (varies) F, W, S
Topics to be selected each quarter. Prerequisite: Consent of instructor.

299 Individual Research (varies) F, W, S
Individual research or investigation under the direction of an individual faculty member. Prerequisite: Consent of instructor.

GRADUATE SCHOOL OF ADMINISTRATION

Lyman W. Porter
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, and in other types of organizations. Among others, these roles include corporate managers, program directors, federal executives, state and local officials, urban and regional planners, administrators for various 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 business-industrial, educational, and governmental organizations; 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 arenas during their careers.

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.

General Admission Requirements

Requests for application materials should be addressed to the Graduate Admissions Office, University of California, Irvine; Irvine, California 92664.

Applicants for the Ph.D. program should complete all phases of the application procedure by March 15. Applicants for the M.S. program should complete all phases of the application procedure by May 31. (GSA also admits applicants in the winter and spring quarters; application procedures should be completed six weeks prior to the beginning of the appropriate quarter.)

In addition to the general University of California rules governing admission to graduate study, the Graduate School of Administration normally requires the following:

1. The Graduate Record Examination (verbal and quantitative aptitude parts) or the Admissions Test for Graduate Study in Business.
2. Subject matter preparation that emphasizes a background in social science courses (psychology, sociology, economics, political science, etc.), *and* coursework in quantitative areas, such as mathematics at the level of introductory calculus, and probability and statistics.

3. A previously prepared paper (research report, essay, case study) which may be indicative generally of the applicant's interests and capabilities.

Evaluation of the applicant's file for admission will consist of an integrated assessment of all materials (test scores, transcripts of previous academic work, previously prepared paper, statements on application forms, and letters of recommendation). There are no arbitrary cut-off points on any of the criteria for admission – rather, admission is on the basis of the total configuration of qualifications. (In those cases where there is no question concerning the quality of an applicant's aptitudes and previous academic work, but where there are major deficiencies in prior subject matter preparation, applicants can 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 show this on their application forms.)

Educational Objectives

Regardless of the content of particular courses, it is expected that all degree candidates will be exposed to and have the ability to use the following:

1. **General Knowledge:** The Broad Context of Organizations and Management: The mid-twentieth century (significant trends, conditions, and problems); history of science, scientific inquiry, and the philosophy of science; economic, political, and social analysis.

2. **Conceptual and Empirical Knowledge of Organizations:** Basic concepts of management; the structure and functions of organizations, including comparative analysis and inter-organizational relations; levels and units of decision-making; individual behavior and group norms; operating environments of organizations.

3. **Specific Knowledge of Particular Arenas of Administration:** Depth study of specific institutional environments for administrative practice, such as educational, governmental, business-industrial organizations, and other types of organizations.

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:** 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 Master of Science in Administration

The M.S. program in GSA requires a minimum of 23 quarter courses with a minimum overall grade point average of 3.00. The 23 quarter courses normally take two full academic years or their equivalent in part-time registration. The courses in the M.S. program are divided into two groups, each group designed to achieve specific educational objectives.

Core Courses

The first group consists of twelve Core Courses and has two fundamental aims: (1) to develop skills needed to select and use effectively the appropriate means, methods, and techniques for diagnosing and solving organization 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.

The twelve Core Courses are listed below. For descriptions of the general content of these courses, refer to section on courses. With the exception of Quantitative Methods (two quarters), any core course may be taken in the first or second year. Quantitative Methods must be taken in the winter and spring quarters of the first year.

The core will consist of the following 12 quarter courses: Quantitative Methods for Administration; Quantitative Methods for Administration (continued); Microeconomics for Administration; Macroeconomics for Administration; Accounting and Financial Control; Organization Theories and Models; Organization Theories and Models (continued); Interpersonal Dynamics; Manpower Utilization and Labor Relations; Institutional Arena (Seminar in Educational Administration, or Business Administration, or Public Administration); Institutional Arena (continued); Workshop in Administrative Problem-Solving.

Elective Courses

The remaining coursework for the M.S. degree will consist of 11 elective courses. The major emphasis in the elective courses will be on the development of specialized knowledge relevant to particular institutions (e.g., educational, business, government, or other types of 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. These elective courses are selected by the student in light of his educational and career goals and interests.

The Three-Two 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 other campus units such as the 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 one of these other units, followed by two years in the Graduate School of Administration. Successful completion of requirements in this program leads to a Bachelor's degree in the cooperating field 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.

Part-Time Study

Students may enroll in the M.S. program on a part-time basis. Such students normally take two courses per quarter and are required to complete the M.S. degree in no more than four years. At present GSA does not regularly offer night courses; however, an attempt will be made to accommodate the needs of part-time students by offering several courses each quarter at convenient late afternoon or evening hours. (Note: University regulations state that "the full registration fee is required of the students regardless of the number of courses taken.")

The Doctor of Philosophy in Administration

Students who have completed the GSA M.S. program (or have obtained a Master's Degree elsewhere in an area of administration) may be eligible for the GSA doctoral program. Requirements of the Ph.D. program include a broad knowledge of core disciplines as represented by the 12 core courses of the M.S. program. In addition, the Ph.D. must qualify as a skilled researcher and must complete a significant exercise demonstrating these skills.

Although there is considerable variation in the length of time beyond a master's degree needed to complete the Ph.D., a realistic range would be two to four years. The Ph.D. program is divided into three phases: preliminary, qualifying, and dissertation.

The preliminary phase (which must be completed within 5 quarters) is designed to ensure that all Ph.D. students have (1) a thorough knowledge of core materials, (2) familiarity with administrative problems associated with a specific institutional arena (e.g., educational, business-industrial, or government administration), (3) knowledge of how to conduct research, and (4) a depth of knowledge in a basic discipline or tool relevant to administration (e.g., operations research, behavioral science models for administration).

In the qualification phase the student prepares for dissertation research in an area of specialization. This phase is completed when an oral qualifying examination is passed. Passing this examination formally advances the student to candidacy.

The dissertation phase involves a significant original research project which demonstrates the Ph.D. student's creativity and ability to launch and sustain a career of research. The dissertation attests to the usual scholarly objectives of any Ph.D. program.

There are no foreign language requirements in the GSA Ph.D. program.

GRADUATE SCHOOL OF ADMINISTRATION FACULTY

Lyman W. Porter, Ph.D. Yale University, *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*

George W. Brown, Ph.D. Princeton University, *Professor of Administration and Information and Computer Science*

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, *Associate Professor of Administration, Associate 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*

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

COURSES IN GRADUATE SCHOOL OF ADMINISTRATION

201A Introduction to Quantitative Methods (1) F
Basic concepts of probability theory and methods of statistical inference, emphasizing application to administrative and management decision problems. Topics include random variables and their properties, the central limit theorem, analysis of variance and regression, non-parametric methods, and decision theory.

201B-C Quantitative Methods for Administration (1-1) W, S
The tools of mathematical modeling as a basis for managerial decision-making. Deterministic models including linear programming, production smoothing, and inventory control. Probabilistic models including Bayesian and classical approaches to decision problems, design of experiments, computer simulation.

202A-B Organization Theories and Models (1-1) F, W
Description, analysis, and comparison of organizations, and behavior of individuals within organizations. Analysis of behavior in a wide range of organizations and societies. Theories and models relating to goals and objectives, structure, management and leadership, group influence, motivation and change.

202C Organization Theories and Models (1) S
Emphasis on skills in developing models of organizational behavior. Prerequisites: 202A-B.

203 Accounting and Financial Management (1) F
Nature and purpose of accounting, principal accounting instruments, and valuation problems. The finance function in the short and long run, including cost of capital and capital structure.

204 Microeconomics for Administration (1) W
Equilibrium theory of individual economic decision units, with primary emphasis on theory of the firm, theory of the household, and social welfare theory. Topics include derivation of demand curves, production functions, models of competition activity analysis, and related concepts.

205 Macroeconomics for Administration (1) S
Principal determinants of national income and employment, with emphasis on concepts, tools, and data. Construction of National Income and Product Accounts, classical, Keynesian, and other models, and applications to fiscal and monetary policy instruments.

206 Manpower Utilization and Labor Relations (1) S
Policies dealing with an organization's relationship with its individual members and with its organized members. Topics include underlying assumptions of and values expressed by manpower policies, exploration and economic implications of alternative policies, labor organization, collective bargaining, and dispute settlement.

207 Interpersonal Dynamics (1) F
Theory and practice devoted to the nature and significance of interpersonal dynamics in organizational and administrative contexts, with opportunity for the student to enhance awareness of his own interpersonal style and its impact as well as to develop increased competence.

208 Workshop in Administrative Problem-Solving (1) W
Provides experiential learning opportunities in a generalized case-oriented approach, designed to integrate conceptual-theoretical knowledge and common tools and techniques as required by a problem or task context. Problems drawn from simulated activities, field projects, or other sources. May be repeated once for credit.

211A-B Seminar in Public Administration (1-1) F, W
Government organizations and administration within them. Historic development and central concepts, issues, and problems of public administration; structure and processes of government and of the administration function in government; planning, implementing, and evaluating governmental policies.

212A-B Seminar in Business Administration (1-1) F, W
Business organizations, businessmen, environment of and interactions among business organizations. Values, goals and objectives; profit, decision processes, and finance; the various environments, ethics, conflict of interest, and social responsibility; competition and concentration; comparative analysis of businesses; input-output system.

212C Seminar in Business Administration (1) S
Further exploration of selected topics from 212A-B. Prerequisites: 212A-B.

213A-B Seminar in Educational Administration (1-1) F, W
The educational institution as an organization and the role of the administrator therein, with particular emphasis on higher education. Educational policies and policy making, financing of education, the societal context, employment patterns, innovations, current problems and long-range trends.

280A-B-C-D-E-F-G- . . . Advanced Study in Special Topics
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.

299 Individual Directed Study
Individual study under the direction of a selected faculty member. Prerequisites: Determined by instructor.

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. Entrance into the Graduate Program of Teacher Training requires the same grade point average as for any other graduate program.

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 breadth requirement (see page 23). The second area of the program is training in the subject matter to be taught. This includes both the undergraduate major and course work in the graduate school. The third phase of preparation of teachers is professional education and student teaching.

At the University usually the first two years of courses cover the general educational background, in addition to some training in subject matter. The next two years cover, in much greater depth, the preparation in subject matter, with possibly a small amount of attention to the training in teaching. About two-thirds of the fifth year are spent on training in Education and about one-third on further training in the subject matter area. In recent years, and particularly on the UCI campus, the training in subject matter not only has had the virtue of depth but has tended to have an additional dimension in breadth. Although a prospective teacher cannot be an expert in all areas of his major, he can acquire some knowledge of the various areas through in-depth study in the major field. It should also be noted that the student needs training in subjects closely related to his academic area. For example, a physical science or social science major will need strong mathematics preparation.

In the third phase of this program of preparation of teachers, namely the training of teachers, the coverage is broad: training in methods of teaching, in use of multimedia, training in the area of responsibilities, teaching strategies for minorities, legal information, district procedures, discipline, levels of student ability, means of motivating the reluctant learners, and a number of other aspects of "good teaching."

Teaching Credentials

A fifth year of college work taken in the Graduate Division is required for any teaching credential. Students planning to become teachers can qualify at UCI for the Standard Teaching Credentials with a specialization in Elementary Teaching, with a specialization in Secondary Teaching, or in Junior College Teaching. The Standard Elementary Teaching Credential authorizes persons to teach in kindergarten and grades one through nine; the Standard Secondary Teaching Credential authorizes the teaching of subjects in the teaching major and teaching minor (not required) in grades seven through twelve (all grades of any senior high school, junior high school, or the seventh and eighth grades of an elementary school). The Junior College Credential requires an M.A. in an academic subject.

Requirements for either the Elementary or Secondary Teaching Credential are such that the student who completes the major at UCI (including the 6-3-3 breadth requirement) will have completed virtually all of the undergraduate courses essential to the credential. Thus it is not necessary for the undergraduate student to consult with the Office of Teacher Education until some time in his upper-division experience. The breadth of the Irvine graduation requirements simplifies the credential requirements to the point that the only deviation from a regular B.A. degree might be the inclusion of Education 171 and either 170, 172, or 175 during the junior or senior years, plus an English composition course more advanced than freshman English. Under the provisions of the Teacher Licensing Law of 1970 a course in reading is required of all secondary teachers. It will be effective January 1, 1974.

In addition to the regular credential program there is the possibility of enrolling in the Elementary Teacher Intern Program. In the intern program the student gets his B.A. degree, attends our summer session, and then goes to work as a regular teacher with a salary but under University guidance. We suggest that students who are aiming at the Intern Teaching program consult with the Office of Teacher Education.

A graduate year is defined as 45 quarter units of upper-division work. If the student is officially in a Master's Degree program so that legitimate graduate-level work is included, this number can be reduced. The fifth year for the credential program is three quarters only. The student is expected to be a full-time student and is admitted only for the three quarters. Work taken in Extension or in Summer Schools does not count as part of the three quarters. During the graduate year the student must complete for the Secondary Credential at least three courses in his major (or in his minor). A minor is not required, but is recommended particularly for the Social Sciences, Biological Sciences, and Humanities students. The three subject matter courses required in the graduate year must be at the upper-division or graduate level. For the Elementary Credential no subject matter courses are required in the graduate year. To qualify for a credential the student is required to complete specified courses in Education and 12 units (three quarters) of supervised teaching. The sequence of Education courses is flexible. Undergraduate students may begin professional education courses during the upper-division years.

Fifth-year teacher credential students with exceptional records may in some departments be admitted to graduate seminars. For example, outstanding English students may be admitted to English seminars on a stand-by basis by petition to the Graduate Committee. The Committee will screen petitions as it normally would screen applications to the Ph.D. program, asking students for letters of recommendation, papers, or other evidence of achievement. With the exception of classes designed primarily for teacher credential students, enrollment in a given English seminar will be granted only after English Department graduate students have been assured of places in it.

No student will be admitted to student teaching without completing a methods course at UCI.

Academic advisement is maintained on a daily basis. Three advisors are available. It is recommended that students come in for their first career advisement early in their university experience although the program is specifically a post-graduate program.

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). 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 104E) 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 28A-B-C. English 139 is required.

2. Social Sciences (anthropology, economics, geography, political science, psychology, and sociology): Some course work in political science would fulfill the United States Constitution requirement described below.

3. Natural Sciences (biological and physical sciences).

4. Mathematics: Requires a knowledge of high school algebra and geometry as a prerequisite. For the Elementary Credential, the student must complete a course in the theory of the structure, arithmetic, and algebra of the real number system (Mathematics 104E) 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 or 172 or 175; Education 104A-B, 105A, and 171; Education 300A-B-C-D-E-F (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:

At least three courses must be upper-division or graduate courses in either the major or minor, but not mixed.

Education 170 or 172 or 175; Education 101 and 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 300A-B-C-D-E-F (supervised teaching). Normally in the winter quarter of the graduate year the student will enroll in Education 320A, and in the spring quarter in Education 320B and 320C.

C. Course work or examination on the provisions and principles of the United States Constitution, as described in (C) above.

Majors and Minors for a Teaching Credential

To help the student determine his program of studies both in preparation for and in completion of the teaching credential, the "major" and "minor" requirements for both the Elementary and Secondary Credentials are detailed below.

Each section of the list below (A, B, C, or D) contains an acceptable combination of major and minor(s).

All majors: Professional education is excluded by law. Thirty-six quarter hours (nine courses) of upper-division or graduate-level work is required for all majors.

All minors: All must be commonly taught in public high schools.

A. Major: Academic subject commonly taught in public schools at appropriate level. An academic subject commonly taught in the public schools is one of the following:

1. A single academic subject of 36 quarter units (nine courses) of upper-division and/or graduate course work in one of the subjects within one of the following fields: physical sciences (chemistry, geology, etc.), social sciences (history, political science, etc.), humanities (English, speech, a single foreign language, philosophy), fine arts (music, art, and drama), or in the single subjects of mathematics or biological sciences. All the biological sciences (botany, zoology, biology, etc.) are a part of the single subject designated as "biological sciences." This biological sciences major for the Elementary Credential requires 42 quarter units.

2. When an applicant holds a degree with a major in an academic interdepartmental area such as social sciences, 36 quarter hours (nine courses) of upper-division or graduate course work must be offered, including 24 quarter hours (six courses) in one of the subjects making up one of the following interdepartmental majors: physical sciences; social sciences; humanities; biological sciences and mathematics; a single physical science and mathematics; and fine arts.

Minor: No minor is required, but if desired, one or more of the following:

1. 30 quarter hours of lower- and upper-division courses in a single academic or non-academic subject, *or*

2. 30 quarter hours in an academic interdepartmental area (as described under the Major in A.2 above), including 20 quarter hours in one subject.

B. Major: Academic subject not commonly taught in public schools.

Minor: Two minors that are commonly taught in public schools are required* (30 quarter hours each). One must be academic; the other may be non-academic.

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

Minor: Must be a single academic subject* (30 quarter hours, including 20 quarter hours at the upper-division or graduate level), *or* 30 quarter hours in an academic interpartmental 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)*

Frances J. Craig, M.S. University of Southern California, *Supervisor of Teacher Education (Intern Teachers)*

Richard A. Denholm, Ed.D. Western Reserve University, *Supervisor of Teacher Education (Mathematics and Science)*

John A. Dunn, M.A. California State College at Los Angeles, *Supervisor of Teacher Education (Art, Dance, Drama)*

James E. Dunning, Ph.D. Claremont Graduate School, *Lecturer in Education (Social Sciences)*

Frances Craig Kenney, M.S. University of Southern California, *Supervisor of Teacher Education (Intern Teachers)*

*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.)

Robert E. Letro, M.A. California State College at Long Beach, *Supervisor of Teacher Education (History and Social Science, Media)*
Sara W. Lundsteen, Ph.D. University of California, Berkeley, *Lecturer in Education (Social Sciences)*
Jack R. McCullough, Ph.D. U.S. International University, *Assistant Director of Teacher Education; Supervisor of Teacher Education (Music; Elementary)*
Ada L. Nix, *Credential Counselor*
Kay L. Reid, B.A. California State College at Long Beach, *Supervisor of Teacher Education (Elementary)*
Shirley J. Schaefer, Ed.D. California State College at Los Angeles, *Lecturer in Education (Social Sciences)*
Myron Simon, Ed.D. University of Michigan, *Supervisor of Teacher Education (Secondary), Associate Professor of English*
Julie A. Allen, *Educational Placement Advisor*

COURSES IN EDUCATION OF TEACHERS

Either Education 170, 172, or 175 should normally be the first education course in which the student enrolls.

100A Educational Strategies for Tutoring the Bi-Lingual Child (1)
A laboratory on-the-job training course in a one to one situation in tutoring. Includes the developing of cognitive learning with the bi-lingual and bi-cultural child, including regular instruction in teaching strategies.

100B Problems and Theories of Teaching the Bi-Lingual Child (1)
Includes the study of Black and Brown social values, ethnic characteristics, instructional procedures, and practice in the teaching of the bi-lingual child as part of a tutorial program.

100C Cross-Age Helping Techniques (1)
Designed to develop instructional strategies and resources which can be used in cross-age and cross-cultural tutoring.

101 Secondary School Curriculum and Organization (1)
The course relates both to the historical and current practices in curriculum concepts and procedures. Special attention will be directed to curriculum procedures and developments in the student's major and minor.

102 Methods of Teaching in the Secondary School (1)
All sections of 102 are normally completed in the fifth year. A laboratory course covering scope and sequence in instructional program in general and in the student's major and minor in particular. Observing and participating in the secondary classroom are required. This course includes extensive study in educational media: films, filmstrips, overhead presentations, television, the computer, and other educational technology. This course is to be taken in the graduate year immediately prior to supervised teaching or concurrently with it. The student enrolls in the field of his major.

102A Methods of Teaching Foreign Languages in the Secondary Schools (1)
Prerequisites: Linguistics 100 and senior standing as a Foreign Language major.

102B Methods of Teaching History and the Social Sciences in the Secondary Schools (1)
Presents a critical examination of methods and teaching strategies used in developing instructional programs in social science, including "The New Social Science Framework for California."

102C Methods of Teaching English in the Secondary Schools (1)
This methods course is no longer offered in Education but appears as English 398. It is required for the English major.

102D Methods of Teaching Music in the Secondary Schools (1)
Includes the basic concepts of music education and available materials. Develops teaching strategies both for performance oriented curriculum and humanities approaches.

102E Methods of Teaching Art in the Secondary Schools (1)
Theory and understanding of teaching strategies in the high school arts and crafts programs. Works on developing skills appropriate to the high school student. Includes art in the humanities program.

102F Methods of Teaching Mathematics and Science in the Secondary Schools (1)
Theories and understanding of teaching strategies in high school mathematics programs. Particular emphasis is placed upon new mathematics and upon inquiry styles in science.

103 Liberal Arts Mathematics (1)
This course develops for the elementary teacher insights into number systems and other phases of modern mathematics. Included is the theory of the structure, arithmetic, and algebra of the real number system.

104A-B Elementary School Curriculum, Organization, and Methods (1-1)
A laboratory course covering scope and sequence in elementary education, current curriculum and methods in the mandated areas, multi-media materials and techniques, classroom organization, management, control, and evaluation. Two hours per week is required in elementary school observation. 104A covers language, literature, and social science methods. 104B includes detailed laboratory study of methods of teaching arithmetic and science.

104C Curriculum and Methods in the Elementary School: Foreign Language (1)
The audio-lingual method of teaching foreign languages at the elementary level. Examination and development of materials; evaluation; articulation with secondary schools.

104D Methods of Teaching English as a Second Language (1)
This course provides insight into the understanding of the building blocks of English and Spanish and how to fit the blocks together, including psychological phenomena brought into play when the second language is encountered.

104E Curriculum and Methods in Elementary School Art Education (1)

105A Curriculum and Methods in the Elementary School: Reading (1)
Principles and methods of developing instructional programs in reading: participation in schools. This course includes the study of phonics as well as the various methods of teaching reading.

105B Reading in the Secondary Schools (1)
A study of various reading programs. This course includes four hours per week in laboratory assignment.

105C Curriculum and Methods in the Elementary School: Early Childhood Education (1)
A critical study of the pre-school child, his kindergarten experiences, and his years in the primary grades. Curriculum and teaching strategies will be the prime content. The laboratory experience will be in the Verano Place Pre-school.

105D Curriculum Methods in Elementary School Music (1)

106A Education of the Pre-School Child (1)
Includes a critical study of the curriculum of the nursery school and the kindergarten, the development of critically significant school programs, based on examination of two campus connected pre-schools, the Verano Place Pre-school and the Social Science Pre-school.

106B Nursery School Curriculum (1)
Examines proper environment provided by the pre-school, child care center, and laboratory schools. Includes work in developing appropriate learning experiences and activities, as well as the study of materials, equipment, and young children's literature.

106C Practicum in Early Childhood Education (1)
Supervised school laboratory experience in schools serving young children. Includes directed teaching in child development laboratories, nursery schools, day-care schools, and similar approved facilities.

107 Children's Literature (1)
The history of all types of children's literature, major authors and illustrators. Includes methods for promoting children's interest in literature and the effect of differential sociocultural backgrounds upon children's motivation.

110A-B Strategies for the Development of Communication and Thinking Skills for the Elementary Child (1-1)
110A will focus on models of teaching of inquiry (social science), spelling, creative writing, language arts, music, art, and drama. 110B will include methods and demonstrations in the teaching of science, mathematics, health, and physical education. Included in each part will be an emphasis on entry skills for the beginning teacher. The student will be able to demonstrate operational success in five teaching areas: Communication; Pre-Active (planning); Individualizing-Evaluation; Management Tactics (including crisis control); Self-Evaluation.

170 History of Education (1)
Course covers the development of educational experiences in this country with special reference to educational issues and problems.

171 Psychological Foundations of Education (1)
Same as Social Science 139R. Covers the learning process, application of psychological principles to the problems of learning and development including that of the minority child. Major topics covered are social interaction, theories of instruction, educational measurement and evaluation, and personality development.

172 Sociological Foundations of Education (1)
Same as Social Science 123X. Influence of social structure in schools, school systems; American cultural values and their influence on education; particular emphasis is placed on problems of ethnic and culturally different students in schools.

175 Philosophy of Education (1) F
Same as Philosophy 175. Theories of education, past and present. The aims and methods of education. The philosophical assumptions about the nature of man and the nature of human knowledge on which theories of education are based.

180 Special Topics: Curriculum and Methods (1)
This is an advanced course in curriculum and assumes that the student has already completed some phase of curriculum work, either elementary or secondary. It is tutorial in nature.

181 Principles of Curriculum Construction Covering Curriculum K-12 (1)
This course will study the basis for making public school curriculum decisions; theories, principles, and background for operational techniques for public school curriculum planning; strategies and development of educational programs in general.

183 Elementary Curriculum, K-8 (1)
Emphasis on what is being taught in all areas and at all levels in the elementary school, how it all fits together and what we expect children to know. The state framework, texts, and other materials will be studied and critiqued. A study of the basis for making public school curriculum decisions, theories, principles, and background for operational techniques for public school curriculum planning, notions and development of educational programs in general, liberal, and professional education.

190 History and Philosophy of Classical Education (1)
A historical study of early European education.

191 Experimentation in Media of Communication and Instruction (1)
Involves 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 organized systems of learning.

193 Learning Disabilities in the Schools (1)
Definition and nature of learning disabilities; means of recognition, diagnosis, and remediation of learning disabilities as manifested in intermediate and high school students.

194 Organization and Administration of Public Education Systems: Elementary and Secondary (1)
School management covering the organization and administration of elementary and secondary schools. Emphasis is upon administrative-supervisory aspects of curriculum design and planning.

197 Individually Arranged Field Study (1)
A planned field study program wherein the student has sufficient background to undertake the field study. The area of study has to be within the competence of the sponsoring faculty member.

198 Directed Course Study on Special Topics (1)
This course consists essentially of a program of laboratory experiences in the public schools set up and conducted for persons who are in advanced levels of teacher preparation.

199 Individual Study (1)
Intensified advanced study in areas in which a student has considerable background under the direction of a faculty member who has competence in the area.

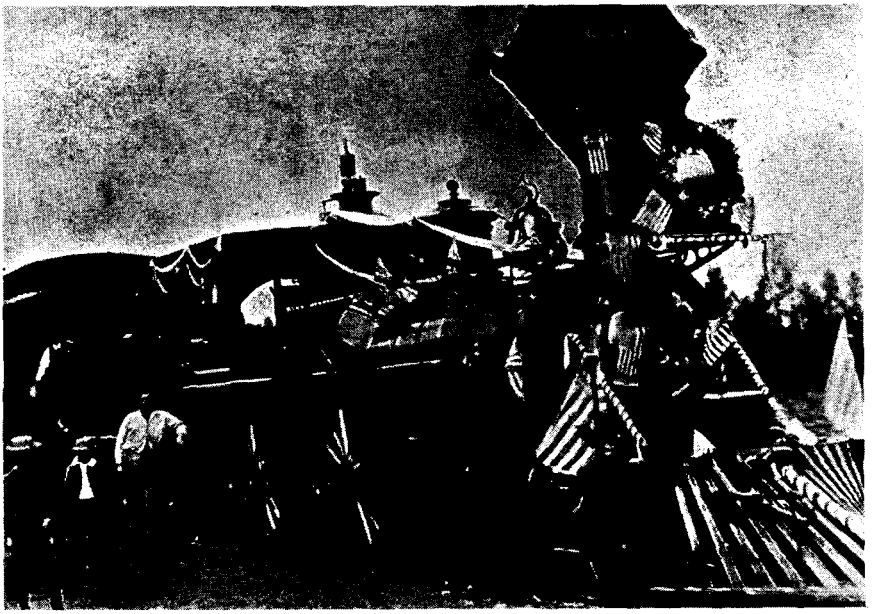
300A-B-C-D-E-F Supervised Teaching in the Elementary School (1-1-1-1-1-1)
Must include 180 clock hours of actual teaching in a course in student teaching.

301 Secondary School Curriculum and Organization (1)
The course relates both to the historical and current practices in curriculum concepts and procedures. Special attention will be directed to curriculum procedures and developments in the student's major and minor.

310A-B-C Intern Teaching in the Elementary School (1-1-1)
Must be a contract intern with a school district and be enrolled in graduate status at the University.

320A-B-C-D-E-F Supervised Teaching in the Secondary School (1-1-1-1-1-1)
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.



Tustin, California. July 4, 1889.

COLLEGE OF MEDICINE

Warren L. Bostick, M.D.
Dean

Good health in its broadest sense – physical, mental, social, and environmental – is recognized as a necessity in our society. Our expanding population, with its expanding needs for health care, demands an ever increasing number of physicians in all specialties and an increasingly better use of those physicians we are training. At the same time, investigators in the field of medicine must be trained, for medical science cannot advance without the creation of new knowledge about health and disease; and dedicated, skilled teachers are needed to bring this new knowledge to students.

The College of Medicine recognizes three responsibilities: to create knowledge through research; to disseminate knowledge through teaching; and to make knowledge available to members of the medical community through continuing education programs. The College also recognizes its responsibility for developing in its students an attitude of compassion, of sympathy with and understanding for patients as individuals within a total social and economic environment.

Facilities

Preclinical instruction at the College of Medicine is conducted in facilities on the Irvine campus, which include departmental offices and laboratories, student multidiscipline laboratories, and academic support units such as the medical sciences library, biometrics laboratory, scientific equipment suite, and vivarium. Students can watch televised surgical operations and clinical procedures in color on videotape from the studio at UCI's major affiliated teaching hospital or live from the clinics and operating rooms; a two-way audio system permits students to ask questions during the procedures.

Architectural plans for the College's first major facility, Medical Sciences I, will be completed in 1972, and the building will be occupied in 1974-75. This is to be followed by a University hospital (Medical Sciences II), to be occupied in 1975-76. Medical Sciences III, a clinical sciences facility, will complete the basic requirements for the medical educational program and form the nucleus of the 150-acre health sciences complex at UCI.

Clinical instruction is conducted at various affiliated hospitals:

– Orange County Medical Center, a 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 portions of their medical training in every clinical area at the Medical Center.

– The Veterans Administration Hospital in Long Beach has training emphases in medicine, surgery, psychiatry, physical medicine, and rehabilitation.

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

– Childrens Hospital of Orange County provides acute care for children from birth to 17 years of age with any type of medical or surgical condition.

Internship and Residency Programs

The College of Medicine offers professional postdoctoral programs for interns and residents at its various affiliated hospitals. The intern program includes rotating (mixed) internships in psychiatry, radiology, and pathology, as well as straight internships in medicine, gynecology and obstetrics, pediatrics, and surgery. The resident program offers curricula in most disciplines. All programs meet the formal standards of the American Medical Association and the appropriate specialty boards.

ADMISSION

The College gives equal consideration to applicants of all ethnic and racial backgrounds, religious preferences, and to both men and women. All are encouraged to apply. All inquiries should be addressed to: Office of Medical Admissions, College of Medicine, University of California, Irvine; Irvine, California 92664.

First-year students are admitted only in July of each year.

A student formerly enrolled in the College may be required, before readmission, to pass examinations in the subjects previously completed.

Candidates for admission to the first-year class in the College must meet the following requirements:

1. The candidate must have completed a four-year high school course, or its equivalent, acceptable for enrollment in the college of letters, arts, and sciences of an accredited university, college, or junior college.
2. The candidate for admission must have completed, with demonstrated superior scholarship record, a minimum of three full years of premedical work; this work must total not less than 90 semester units or an equivalent number of quarter units and be acceptable for Bachelor's Degree credit in an accredited institution of higher learning. The number of units carried is to be the amount necessary to complete the Bachelor's Degree requirements in no more than four years. Candidates for admission may submit junior college credit only to the extent granted on transfer to a four-year college or university. For scholarship evaluation, actual letter or numerical grades in courses are highly desirable and are essential in the areas of required subjects. The following minimum specified subjects of premedical work are offered as a guide to the candidate: chemistry (including general, organic, and quantitative analysis), 16 semester units or 24 quarter units; physics, 8 semester units or 12 quarter units; biology and/or zoology (including vertebrate embryology), 12 semester units or 18 quarter units.

   These courses serve as a practical foundation for work in the medical college. Additional work in the sciences does not necessarily improve the applicant's prospect of admission, but courses in mathematics (calculus, statistics), comparative anatomy of the vertebrates, and genetics are considered to provide a stronger premedical foundation and are looked on with favor. Duplication of medical curriculum subjects is not an advantage (i.e., anatomy, physiology, or bacteriology).

Premedical students are advised to take advantage of the opportunity for intellectual maturation afforded by a well-rounded liberal arts curriculum. The study of English is of particular importance.

The applicant should direct any questions he may have regarding the acceptability of a course to the Office of Admissions.

3. The candidate must attain a satisfactory score in the Medical College Admissions Test. The score report for this test must be received by the Admissions Office of the College before acceptance may be granted. Inquiries regarding this test should be addressed to the Medical College Admissions Test, The Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.

4. A personal interview with a member of an Interview Committee is required of the candidate after preliminary consideration of his application for admission. Letters of recommendation from college professors are invited. Candidates for interview will be notified of the date. Those candidates who live a considerable distance from the Irvine campus may be interviewed by someone designated by the College of Medicine. An interview does not guarantee admission.

Western Interstate Commission for Higher Education

The College of Medicine participates in the student exchange program of the Western Interstate Commission for Higher Education, under which qualified legal residents of western states without medical schools — Alaska, Arizona, Hawaii, Idaho, Montana, Nevada, and Wyoming — are given a reduction of tuition and fees. To be eligible for this program, the student must apply to the WICHE certifying officers in his own state. For addresses of certifying officers, write to the Western Interstate Commission for Higher Education, University East Campus, Boulder, Colorado 80304.

Procedure for Admission

The College is a member of the Association of American Medical Colleges Application Service (AAMCAS). Requests for applications may be submitted to the College or directly to the Association of American Medical Colleges, One Dupont Circle N.W., Washington, D.C. 20036. All AAMCAS applications will be reviewed by our Admissions Committee. An applicant may then be requested by us to submit additional material consisting of letters of recommendation, supplemental transcripts, health history, personal information form, two photographs, and a fee of $20.

No additional material should be submitted until requested by the College.

Applications may be submitted at any time between June 1 and December 15 of the year preceding that into which entrance is desired.

No application for admission will be accepted which does not clearly indicate that all the required subjects will have been completed by the date of entrance.

Selection of Candidates

The fulfillment of scholastic entrance requirements and the ability to pay tuition and other fees do not of themselves constitute a right to study medicine. This privilege is sought by many more applicants than educational facilities can accommodate. The privilege is granted, by action of the Admissions Committee and the Dean, to those who possess, in addition to scholarship, other attributes important in the physician. Ethnic background, sex, and religious or political convictions do

not enter into the consideration of the Committee. Those students selected to enter the program must continue throughout the course to demonstrate their ability and worthiness to assume the responsibilities of the physician.

No candidate for admission will be considered who has been dismissed from any college, university, or other professional school. If the applicant has attended another professional school, he must submit complete official transcripts and a letter of honorable dismissal from that school.

Notice of Appointment

The Dean of the College will notify the candidate of his appointment as soon as his application has been acted upon by the Admissions Committee. Written acceptance of the appointment, accompanied by an acceptance fee of $50.00, must be sent to the College within two weeks after receipt of the notice of appointment. This fee will be applied against the University registration fee for the first quarter. Should an applicant accept admission and then decide to withdraw prior to March 1 of the year of anticipated admission, this fee will be refunded; after that date no refund shall be made. This is in keeping with the recommendations of the Association of American Medical Colleges.

COLLEGE OF MEDICINE FACULTY

For complete medical faculty listing, refer to the College of Medicine Announcement.

Bruce D. Ackerman, M.D. University of Chicago, *Associate Professor of Pediatrics*

David L. Albin, M.D. University of California, Los Angeles, *Assistant Clinical Professor of Psychiatry & Human Behavior*

Harold J. Allen, Jr., M.D. University of California, Los Angeles, *Assistant Professor of Medicine (Dermatology)*

Stuart M. Arfin, Ph.D. Albert Einstein College of Medicine, *Assistant Professor of Biochemistry*

Steven A. Armentrout, M.D. University of Chicago, *Associate Professor of Medicine (Hematology)*

Charles S. Arminski, M.D. California College of Medicine, *Assistant Professor of Physical Medicine & Rehabilitation*

Edward R. Arquilla, M.D., Ph.D. Western Reserve University School of Medicine, *Chairman of Pathology, Professor of Pathology, Medical Pharmacology & Therapeutics, and Molecular Biology & Biochemistry*

Stephen O. Atherton, M.D. New York University Medical School, *Instructor of Pediatrics*

Roland M. Atkinson, Jr., M.D. Stanford University School of Medicine, *Assistant Adjunct Professor of Psychiatry & Human Behavior*

Robert H. Bartlett, M.D. University of Michigan Medical School, *Assistant Professor of Surgery*

Christian Bellardi, M.D. University of California, San Francisco, M.P.H. University of California, Berkeley, *Assistant Professor of Pediatrics in Residence*

J. Edward Berk, M.D. Jefferson Medical College, D.Sc. University of Pennsylvania, *Chairman and Professor of Medicine*

Arnold Binder, Ph.D. Stanford University, *Professor of Psychology, Social Ecology, and Psychiatry & Human Behavior; Director of Social Ecology*

Walter Birnbaum, Jr., M.D. University of California, San Francisco, *Assistant Professor of Radiological Sciences*

John M. Bissonnette, M.D., C.M. McGill University Faculty of Medicine, *Assistant Professor of Gynecology & Obstetrics*

Warren L. Bostick, M.D. University of California, San Francisco, *Professor of Pathology and Dean of the College of Medicine*

Mary Jane Bromley, R.N., *Lecturer in Nursing,* Regional Medical Programs

Alfred A. Buerger, Ph.D. Cornell University, *Assistant Professor of Physical Medicine & Rehabilitation (Neurophysiology)*

Alan R. Bures, M.D. Indiana University School of Medicine, *Assistant Professor of Medicine*

Nora E. Burns, Ph.D. University of London, *Lecturer in Surgery (Biochemistry)*

David H. Calhoun, Ph.D. University of Alabama, *Adjunct Instructor of Medical Microbiology*

Justin D. Call, M.D. University of Utah College of Medicine, *Professor of Psychiatry & Human Behavior*

Berry Campbell, Ph.D. Johns Hopkins University, *Professor of Physiology*

Jean E. Carlin, M.D., Ph.D. University of Minnesota Medical School, *Clinical Instructor of Psychiatry & Human Behavior*

Daniel S. Castile, M.D. Washington University School of Medicine, *Assistant Clinical Professor of Psychiatry & Human Behavior*

William S. Champney, Ph.D. State University of New York, *Adjunct Instructor of Medical Microbiology*

Frank R. Ciofalo, Ph.D. University of Southern California, *Assistant Professor of Medical Pharmacology & Therapeutics*

Jeffrey L. Clark, Ph.D. University of Chicago, *Assistant Professor of Biochemistry*

Harry B. Cohen, Ph.D. McGill University, *Assistant Professor of Psychiatry & Human Behavior in Residence*

Manley Cohen, M.B., B.Ch. University of Witwatersrand, *Assistant Professor of Medicine in Residence*

Jay B. Cohn, M.D. Yale University School of Medicine, *Associate Adjunct Professor of Psychiatry & Human Behavior*

Robert C. Combs, M.D. University of California, San Francisco, *Associate Dean of Continuing Medical Education, Coordinator of the Regional Medical Programs, Clinical Professor of Surgery*

John E. Connolly, M.D. Harvard Medical School, *Chairman and Professor of Surgery*

Marie Y. Cook, M.P.A. University of Southern California, *Lecturer in Physical Medicine & Rehabilitation*

T. Timothy Crocker, M.D. University of California, San Francisco, *Professor of Medicine and Chairman of Community & Environmental Medicine*

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

Edward R. Dana, M.D. Johns Hopkins University, *Associate Clinical Professor of Radiological Sciences*

Alvin Davis, M.D. Yale University School of Medicine, *Associate Adjunct Professor of Medicine*

Earle A. Davis, Jr., Ph.D. University of Illinois, *Lecturer in Anatomy*

Lyle C. Dearden, Ph.D. University of Utah, *Associate Professor of Anatomy and Radiological Sciences*

Mihai C. Demetrescu, Ph.D. Romania, *Assistant Professor of Physiology in Residence*

Robert B. Drury, M.D. University of Southern California, *Associate Clinical Professor of Psychiatry & Human Behavior*

Kenneth W. Dumars, M.D. University of Colorado, *Associate Professor of Pediatrics and Physical Medicine & Rehabilitation*

Robert W. Earle, Ph.D. University of Southern California, *Senior Lecturer in Medical Pharmacology & Therapeutics and Assistant Dean, Medical Student Affairs*

Jack I. Eisenman, M.D. California College of Medicine, *Assistant Professor of Radiological Sciences in Residence*

Rudolf Ekstein, Ph.D. University of Vienna, *Lecturer in Psychiatry & Human Behavior*

Henry W. Elliott, Ph.D. Stanford University, M.D. University of California, San Francisco, *Chairman and Professor of Medical Pharmacology & Therapeutics and Lecturer in Surgery (Anesthesiology)*

John R. Elpers, M.D. Indiana University School of Medicine, *Assistant Clinical Professor of Psychiatry & Human Behavior*

Phillip M. Evanski, M.D. Western Reserve University, *Assistant Professor of Surgery (Orthopedic)*

Alan S. Fairhurst, Ph.D. University of Liverpool, *Associate Professor of Medical Pharmacology & Therapeutics and Assistant Dean of Organized Research & Teaching Resources*

Daniel J. Feldman, M.D. New York University School of Medicine, *Adjunct Professor of Rehabilitative Medicine, Psychiatry & Human Behavior and Physical Medicine & Rehabilitation*

William H. Fellner, Ph.D. University of California, Berkeley, *Assistant Professor of Community & Environmental Medicine (Biostatistics)*

Eldon L. Foltz, M.D. University of Michigan Medical School, *Professor of Surgery (Neurological) and Chief of Neurological Surgery*

Suzie W. Fong, M.D. University of California, San Francisco, *Assistant Professor of Pediatrics*

Glenn W. Fowler, M.D. Louisiana State University School of Medicine, *Assistant Professor of Pediatrics*

Louis Fridhandler, Ph.D. McGill University, *Associate Adjunct Professor of Medicine (Biochemistry)*

David W. Furnas, M.D. University of California, San Francisco, *Associate Professor of Surgery (Plastic) and Chief of Plastic Surgery*

Stanley Galant, M.D. University of California, San Francisco, *Assistant Professor of Pediatrics*

Alan B. Gazzaniga, M.D. Harvard Medical School, *Assistant Professor of Surgery*

Dominick Gentile, M.D. Georgetown University School of Medicine, *Associate Professor of Medicine*

Roland A. Giolli, Ph.D. University of California, Berkeley, *Associate Professor of Anatomy*

Albert Globus, M.D. Northwestern University School of Medicine, *Assistant Professor of Anatomy and Psychiatry & Human Behavior*

Gordon G. Globus, M.D. Tufts University School of Medicine, *Associate Professor of Psychiatry & Human Behavior*

Arthur I. Goldstein, M.D. Albert Einstein College of Medicine, *Assistant Professor of Gynecology & Obstetrics*

Louis A. Gottschalk, M.D. Washington University School of Medicine, *Chairman and Professor of Psychiatry & Human Behavior*

James H. Graham, M.D. University of Alabama School of Medicine, *Professor of Medicine (Dermatology) and Chief of Dermatology*

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

Gerald A. Greenhouse, Ph.D. City University of New York, *Assistant Professor of Anatomy*

John A. Guido, M.D. Chicago Medical School, *Assistant Adjunct Professor of Psychiatry & Human Behavior*

Grant Gwinup, M.D. University of Colorado Medical Center, *Professor of Medicine (Endocrinology)*

Emily N. Hackler, R.N., *Lecturer in Nursing,* Regional Medical Programs

Peter F. Hall, M.D. University of Sydney, Ph.D. University of Utah, *Chairman of Functional Correlates-B, Professor of Physiology and Developmental & Cell Biology*

Clifford N. Harris, M.D. New York University School of Medicine, *Assistant Professor of Medicine in Residence*

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

E. Wayne Hull, Ph.D. University of California, Berkeley, *Lecturer in Biochemistry*

Leroy Hyde, M.D. Cornell University Medical College, *Lecturer in Medicine*

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

Margaret J. Ingman, M.D. Baylor College of Medicine, *Assistant Clinical Professor of Pediatrics*

Lloyd T. Iseri, M.D. Wayne State University School of Medicine, *Professor of Medicine (Cardiology) and Vice Chairman of Medicine*

Norman R. Jaffe, Ph.D. University of Florida, *Lecturer in Anatomy*

Oscar Janiger, M.D. California College of Medicine, *Lecturer in Psychiatry & Human Behavior*

E. Marshall Johnson, Ph.D. University of California, Berkeley, *Chairman of Human Morphology, Professor of Anatomy and Developmental & Cell Biology*

Viliam Jonec, M.D. Czechoslovakia, *Lecturer in Physiology*

Robert M. Julien, Ph.D. University of Washington School of Medicine, *Assistant Professor of Medical Pharmacology & Therapeutics*

Marvin A. Kaplan, M.D. California College of Medicine, *Associate Professor of Medicine in Residence*

Marvin S. Kaplan, M.D. University of Illinois College of Medicine, *Assistant Professor of Surgery*

Milton T. Kaplan, Ph.D. University of Southern California, *Assistant Professor of Medical Microbiology*

Ernest W. Klatte, M.D. Indiana University School of Medicine, *Associate Clinical Professor of Psychiatry & Human Behavior*

Robert I. Kohut, M.D. University of Chicago School of Medicine, *Professor of Surgery (Otolaryngology) and Chief of Otolaryngology*

Norio Kokka, Ph.D. University of California, Berkeley, *Assistant Professor of Medical Pharmacology & Therapeutics*

John C. Kramer, M.D. University of California, San Francisco, *Assistant Professor of Psychiatry & Human Behavior and Medical Pharmacology & Therapeutics*

Stuart M. Krassner, Sc.D. Johns Hopkins School of Public Health, *Associate Professor of Microbiology*

George A. Limbeck, M.D. University of Washington School of Medicine, *Associate Professor of Pediatrics*

Frederic C. Ludwig, M.D. Tubingen (Germany), D.Sc. Sorbonne (France), *Professor of Pathology and Radiological Sciences*

Ronald D. Lunceford, Ph.D. U.S. International University, *Lecturer in Psychiatry & Human Behavior (Sociology)*

Elvin Mackey, Jr., M.D. Howard University, *Assistant Clinical Professor of Psychiatry & Human Behavior*

James H. Mahnke, M.D. University of Washington School of Medicine, *Assistant Professor of Surgery (Neurological)*

Lila M. Maples, R.N., *Lecturer in Nursing,* Regional Medical Programs

Marguerite Markarian, M.D. Hahnemann Medical College, *Assistant Adjunct Professor of Pediatrics*

Mark G. Markowitz, M.D. University of Louisville, *Clinical Instructor of Psychiatry & Human Behavior*

Donald C. Martin, M.D. University of British Columbia Faculty of Medicine, *Associate Professor of Surgery (Urology) and Chief of Urology*

James S. Mayson, M.D. Duke University School of Medicine, *Instructor of Pathology*

James H. McClure, M.D. Ohio State University College of Medicine, *Chairman and Professor of Gynecology & Obstetrics*

James L. McGaugh, Ph.D. University of California, Berkeley, *Professor of Psychiatry & Human Behavior (Psychobiology)*

Frederick L. McGuire, Ph.D. New York University, *Associate Professor of Psychiatry and Human Behavior in Residence (Medical Psychology)*

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

Don S. Miyada, Ph.D. Michigan State University, *Assistant Adjunct Professor of Biochemistry and Pathology (Biochemistry)*

Kivie Moldave, Ph.D. University of Southern California, *Professor of Biochemistry, Chairman of Functional Correlates-A*

Gilbert C. Morrison, M.D. Tulane University School of Medicine, *Assistant Adjunct Professor of Psychiatry & Human Behavior*

Mortimer E. Morton, Ph.D. University of California, Berkeley, M.D. University of Southern California, *Associate Clinical Professor of Radiological Sciences*

H. David Mosier, M.D. Johns Hopkins University School of Medicine, *Professor of Pediatrics*

Harris S. Moyed, Ph.D. University of Pennsylvania, *Chairman of Environmental Interactions, Professor of Medical Microbiology, Medical Pharmacology & Therapeutics, and Microbiology*

Carlos R. Munoz-Mellowes, M.D. Boston University School of Medicine, *Clinical Instructor of Psychiatry & Human Behavior*

Robert M. Nakamura, M.D. Temple University School of Medicine, *Professor of Pathology*

German Navarro, M.D. Universidad Nacional (Columbia), Ph.D. University of California, San Francisco, *Assistant Clinical Professor of Medical Pharmacology & Therapeutics*

Merle J. Nelson, *Lecturer in Physical Medicine & Rehabilitation (Physical Therapy)*

Thos. L. Nelson, M.D. University of California, San Francisco, *Chairman and Professor of Pediatrics*

Ernest P. Noble, Ph.D. Oregon State University, M.D. Western Reserve University School of Medicine, *Professor of Psychiatry & Human Behavior and Medical Pharmacology & Therapeutics*

Ronald Okun, M.D. University of California, San Francisco, *Associate Professor of Medical Pharmacology & Therapeutics and Medicine*

Bernard J. O'Loughlin, M.D. Creighton University School of Medicine, Ph.D. University of Minnesota, *Chairman and Professor of Radiological Sciences*

Robert A. Orlando, M.D. New Jersey College of Medicine, Ph.D. University of Chicago, *Assistant Professor of Pathology*

J. Blair Pace, M.D. Rush Medical College, *Assistant Clinical Professor of Community & Environmental Medicine (Family Medicine), Chairman of the Division of Family Medicine*

David P. Parker, M.D. Chicago Medical School, *Assistant Adjunct Professor of Medicine*

Fred H. Paseman, M.A. University of California, Los Angeles, *Lecturer in Biochemistry*

Victor Passy, M.D. California College of Medicine, *Assistant Professor of Surgery (Otolaryngology)*

E. Mansell Pattison, M.D. University of Oregon Medical School, *Associate Professor of Psychiatry & Human Behavior*

Naomi Payne, R.N., M.S. University of Colorado Medical Center, *Lecturer in Nursing,* Regional Medical Programs

Robert N. Philips, M.D. University of Rochester School of Medicine, *Assistant Clinical Professor of Psychiatry & Human Behavior*

Donald E. Pinder, M.D. California College of Medicine, *Clinical Professor of Anatomy*

Hubert C. Pirkle, M.D. Indiana University School of Medicine, *Associate Professor of Pathology*

Dennis Piszkiewicz, Ph.D. University of California, Santa Barbara, *Assistant Professor of Biochemistry*

Robert W. Porter, M.D., Ph.D. Northwestern University Medical School, *Professor of Surgery (Neurological) in Residence*

Henry W. Pribram, M.B., B.Ch. Cambridge University (England), *Clinical Professor of Radiological Sciences*

Leslie G. Quinlivan, M.D., F.R.C.S., F.R.C.O.G. University of London, *Associate Professor of Gynecology & Obstetrics*

Donald J. Raidt, Ph.D. University of Kansas, *Assistant Professor of Medical Microbiology*

Eugene H. Ratajczak, D.S.W. Catholic University of America, *Lecturer in Psychiatry & Human Behavior (Social Work)*

Frederick Reines, Ph.D. New York University, *Professor of Radiological Sciences and Physics and Dean of the School of Physical Sciences*

Clara M. Riley, Ph.D. Florida State University, *Assistant Clinical Professor of Psychiatry & Human Behavior (Medical Psychology)*

Donald W. Schafer, M.D. University of Cincinnati College of Medicine, *Associate Clinical Professor of Psychiatry & Human Behavior*

William S. Schmidt, M.H.A. University of Michigan, *Associate Dean of Hospital Affairs and Administrator of Hospital & Clinics Development*

Mikio Shikita, Ph.D. University of Tokyo, *Instructor of Physiology*

Janice R. Siegel, M.D. Columbia University, *Clinical Instructor in Surgery and Pediatrics (Speech Pathology)*

Igal Silber, M.D. Hebrew University (Israel), *Assistant Professor of Surgery (Urology)*

Charles A. Sondhaus, Ph.D. University of California, Berkeley, *Associate Professor of Radiological Sciences*

Donald R. Sperling, M.D. Yale University School of Medicine, *Associate Professor of Pediatrics*

Wendell M. Stanley, Jr., Ph.D. University of Wisconsin, *Associate Professor of Biochemistry*

Arnold Starr, M.D. New York University School of Medicine, *Associate Professor of Medicine (Neurology)*

Herbert G. Steger, Jr., Ph.D. University of Southern California, *Assistant Professor of Physical Medicine & Rehabilitation in Residence (Psychology)*

Terry Steinberg, M.D. California College of Medicine, *Assistant Professor of Medicine*

Edward A. Stemmer, M.D. University of Chicago School of Medicine, *Associate Professor of Surgery in Residence*

Paul S. Sypherd, Ph.D. Yale University, *Associate Professor of Medical Microbiology and Microbiology*

William F. Taylor, M.D. Temple University School of Medicine, *Assistant Adjunct Professor of Pathology and Pediatrics*

Richard F. Thompson, Ph.D. University of Wisconsin, *Professor of Psychiatry & Human Behavior (Psychobiology)*

Wm. Benbow Thompson, Jr., M.D. University of Southern California, *Assistant Professor of Gynecology & Obstetrics and Associate Dean of Medical Student Affairs*

Lauri D. Thrupp, M.D. University of Washington Medical School, *Associate Professor of Medicine*

Jeremiah G. Tilles, M.D. Harvard Medical School, *Associate Professor of Medicine and Medical Microbiology*

Jerome S. Tobis, M.D. Chicago Medical School, *Chairman and Professor of Physical Medicine & Rehabilitation*

Joseph P. Tomasulo, M.D. Johns Hopkins School of Medicine, *Assistant Professor of Pathology*

Edward J. Tomsovic, M.D. University of California, San Francisco, *Clinical Professor of Pediatrics and Acting Medical Director, OCMC*

John A. Udall, M.D. Temple University School of Medicine, *Associate Professor of Medicine*

Stanley van den Noort, M.D. Harvard Medical School, *Professor of Medicine (Neurology), Chief of Neurology, and Associate Dean of the College of Medicine*

Halvor Vermund, M.D. University of Oslo (Norway), Ph.D. University of Minnesota, *Professor of Radiological Sciences*

Bernhard Votteri, M.D. University of California, San Francisco, *Assistant Professor of Medicine in Residence*

Akio Wakabayashi, M.D. University of Tokyo Medical School, *Assistant Professor of Surgery*

Robert C. Warner, Ph.D. New York University, *Professor of Biochemistry*

Theodore R. Waugh, M.D. McGill University Faculty of Medicine, *Clinical Professor of Surgery (Orthopedic) and Chief of Orthopedic Surgery*

Robert E. Wax, M.D. University of Wisconsin Medical School, *Assistant Clinical Professor of Radiological Sciences*

Gerald H. Whipple, M.D. University of California, San Francisco, *Professor of Medicine*

Stephen H. White, Ph.D. University of Washington, *Assistant Professor of Physiology*

Archie F. Wilson, M.D. University of California, San Francisco, Ph.D. University of California, Los Angeles, *Assistant Professor of Medicine*

Rodney M. Wishnow, M.D. Washington University, St. Louis, School of Medicine, *Assistant Professor of Medicine and Medical Microbiology in Residence*

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MEDICAL CURRICULUM

The medical curriculum at UCI is based upon a core of 10 quarters plus four elective quarters. The core curriculum includes the body of knowledge, skills, attitudes, and habits considered requisite for all those receiving the M.D. degree, regardless of their future careers.

The first year of the medical education program consists of four interdisciplinary courses, each one quarter in length, taken sequentially by all medical students. The first-year course work concentrates on the sciences basic to clinical medicine; clinicians and their patients are an integral part of the learning situation during the entire year. The remaining six quarters of the core curriculum are clinical in emphasis, with basic science correlates as well as correlation with rehabilitative, community, and preventive aspects of medicine.

The focus is on medical student learning rather than on faculty teaching. Demonstrations, small group discussions and seminars, prosections, appropriate laboratory work by students, student projects oriented to problem solving, audio-visual aids, computer-assisted instruction, and appropriate exposure to clinical situations are an integral part of this focus.

Preclinical Core (first year)

1. **Morphology and Clinical Correlates** (Summer)
   This course includes the study of normal human morphology from sub-cellular, cellular, and organ levels to the individual as a whole with clinical material integrated into the organ system presentation. As this is their first exposure to medical school, students commence learning medical terminology during this quarter.
2. **Function and Clinical Correlates** (F)
   During this quarter students are exposed to all aspects of human function in its broadest sense, including both classical biochemistry and human physiology. These two disciplines are taught on an integrated basis by faculty under the administrative direction of their respective chairmen.
3. **Interaction with the Environment and Clinical Correlates** (W)

   Medical microbiology, immunology, and infectious diseases. During this part of the course, students are taught the fundamental aspects of microbiology and immunology in concert with the principles of infectious disease.

   Community and environmental medicine, biometrics and epidemiology, and patient interviewing. The objective of this part of the course is to provide an understanding of the human organism's relationship to its environment. It is an integrated instructional exercise between medical microbiology and community medicine.
4. **Introduction to Disease and Introduction to Clinical Medicine** (S)

   Pathology. This course correlates the theoretical aspects of disease mechanisms with practical laboratory work, and an integrating influence of clinical pathology is used to give a vertical view of disease mechanisms.

Pharmacology. Emphasis is on the mechanism of action of drugs at the organ or system level, since this is the level at which physicians use drugs; however, fundamental mechanisms are presented at whatever depth will be helpful to the physician.

Introduction to patient care. Students receive instruction and practical experience in examining patients in preparation for the clinical clerkships in medicine, surgery, gynecology and obstetrics, pediatrics, and psychiatry.

Clinical Core (second and third years)

The clinical core consists of six quarters which may be taken in any order. During the clinical core, students work predominantly in hospitals and outpatient clinics.

1. **Medicine and Its Correlates**
   Both inpatients and outpatients are studied under appropriate supervision. Whenever possible, students study the same patients intensively over a period of time, thus enabling them to develop an understanding of holistic medicine.
2. **Surgery and Its Correlates**
   Students study both outpatients, including those in the emergency room, and inpatients. This clerkship emphasizes diagnosis, pathophysiology, and general approaches to the treatment of surgical patients, including the special problems of mass casualties, with the student becoming an integral part of the surgical team.
3. **Pediatrics and Human Development and Correlates**
   This quarter includes instruction in the handling of normal and sick infants and children as well as nutrition and relating with parents and other family members; normal development of the baby into childhood and adolescence; diagnosis of birth and developmental defects and general approaches to repair and/or rehabilitation; common infections predominant in infancy and childhood; and peculiarities of the effects of medication in children.
4. **Clinical Neurosciences and Psychiatry and Correlates**
   During this quarter, each student's study of himself and his patients under adequate supervision provides opportunities to learn about normal and abnormal human behavior. Students learn about interrelationships between psychological and physiological processes in both "functional" and organic disease.
5. **Obstetrics, Gynecology, Reproduction, and Correlates**
   In addition to medical and surgical gynecology, obstetrics, and anesthesia, each student studies the physical, psychological, emotional, and social aspects of the problems of human sexual life, marriage, reproduction, and population control.
6. **Half-Quarter Core Elective**
   To increase the flexibility of the core curriculum, each student is offered an elective opportunity early in his or her course of study.
7. **Half-Quarter Clinical Course: Radiology and Pathology**
   Students assume the role of the radiologist in his various functions, permitting them to thoroughly understand the potentialities of radiological sciences in diagnosis and therapy. Students then assume the role of the pathologist in his various functions, with the objective of studying disease processes from the pathologist's viewpoint.

Post-Core Electives (fourth year)

The last year of the curriculum consists of four elective quarters, within the following broad categories:

1. **Medicine,** including its subspecialties, community medicine, and pediatrics
2. **Surgery,** including its subspecialties, anesthesia, and obstetrics and gynecology
3. **Sciences basic to medicine,** primarily in their laboratory and research aspects
4. **A totally free elective,** which may consist of additional work in any of the foregoing areas, study in other schools or campuses of the University, or other educational experience which satisfies the career needs of the student and is approved by his advisor

The fourteen academic quarters will ordinarily be finished by the student in four calendar years, assuming that he takes two quarters for vacation (or for study outside the M.D. curriculum). It is possible, however, for a student to finish his required courses in three and one-half calendar years by sacrificing his vacation quarters.

For further information on the medical curriculum, see the current UCI College of Medicine Announcement. This may be obtained by writing to the Medical Student Services Office, College of Medicine, University of California, Irvine; Irvine, California 92664.

Pamphlet reporting Santa Ana facts and figures, 1919.

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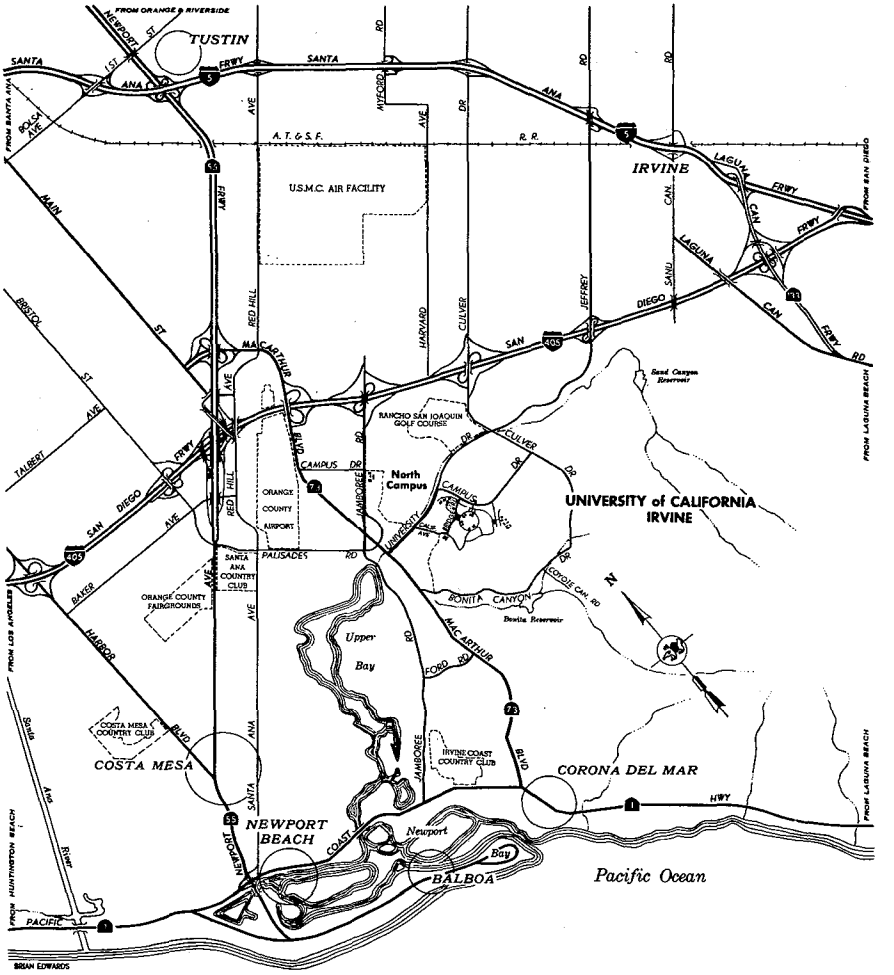
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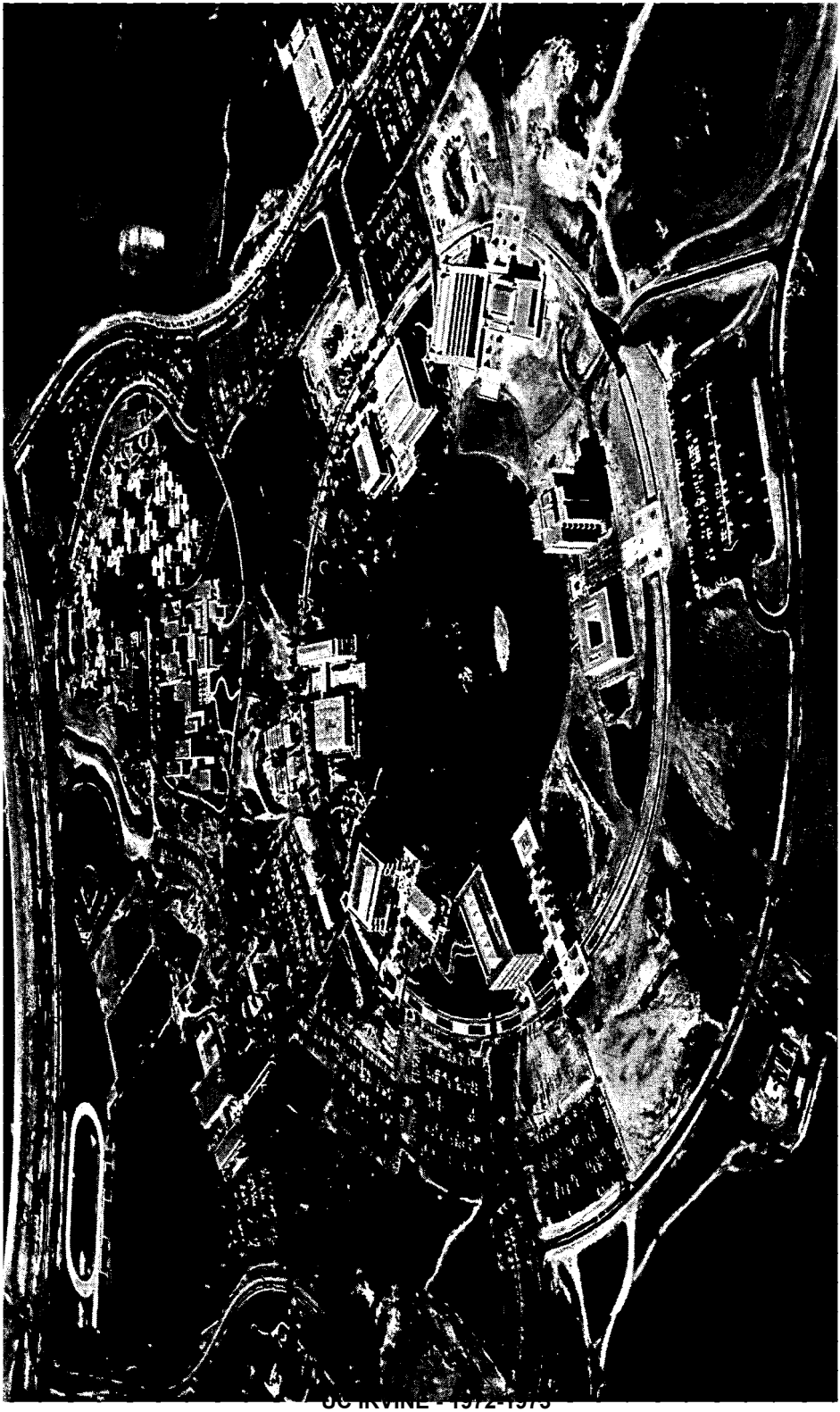

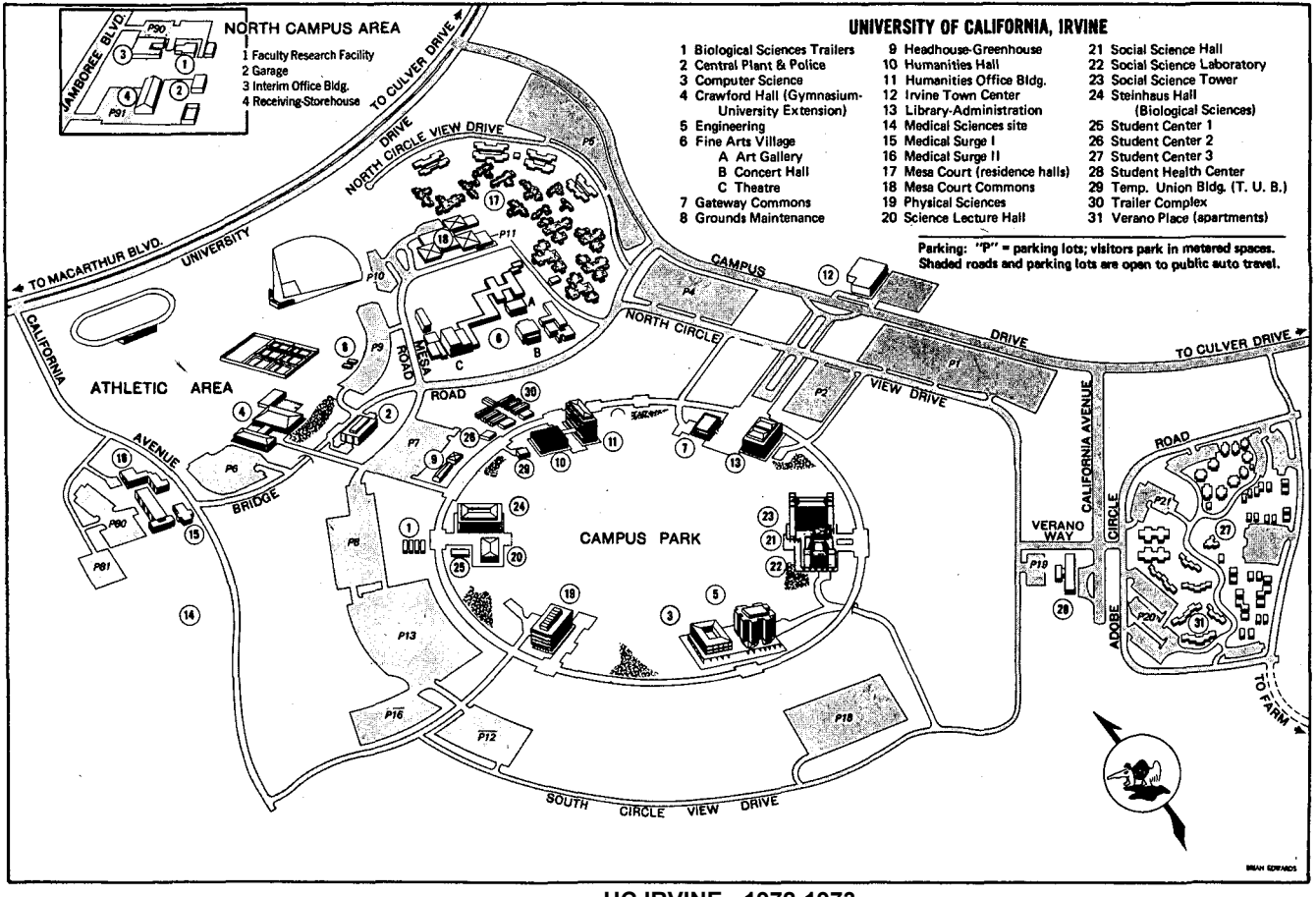

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