UNIVERSITY OF CALIFORNIA, IRVINE
1968-69 CATALOGUE

OCTOBER 1968

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

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

CHARLES J. HITCH
President of the University

The Irvine campus' objective of academic excellence, growth and diversity is reflected in the 1968-69 catalogue. In a sense, this document serves as a progress report on the academic development of the campus since it opened in 1965.

The academic program has been strengthened and broadened in many areas. New and revised courses are offered in every school, greatly enriching the existing programs. New programs include the affiliation of the California College of Medicine, and establishment of the Department of Classics in the School of Humanities and the Department of Information and Computer Sciences under a newly formed Council for Interschool Curricula. The Council provides for the offering of undergraduate degree programs involving more than one school.

Faculty recruitment continues to be characterized by excellence in quality. A new Physical Sciences building is scheduled for completion this year and is the first of a new round of campus construction now in progress. In combination, the expansion of programs, staff and facilities enables Irvine to improve its ability to serve students and the people of California.

DANIEL G. ALDRICH, JR.
Chancellor

CALENDAR 1968/1969

Fall Quarter 1968

Fall Quarter Begins	September 23
Convocation	September 30
Instruction Begins	September 30
Thanksgiving Holiday	November 28, 29
Instruction Ends	December 7
Final Examinations	December 9-14
Fall Quarter Ends	December 14

Winter Quarter 1969

Winter Quarter Begins	January 2
Instruction Begins	January 6
Lincoln's Birthday Holiday	February 12
Instruction Ends	March 15
Final Examinations	March 17-22
Winter Quarter Ends	March 22

Spring Quarter 1969

Spring Quarter Begins	March 31
Instruction Begins	April 2
Memorial Day Holiday	May 30
Instruction Ends	June 7
Final Examinations	June 9-14
Spring Quarter Ends	June 14
Commencement	June 14

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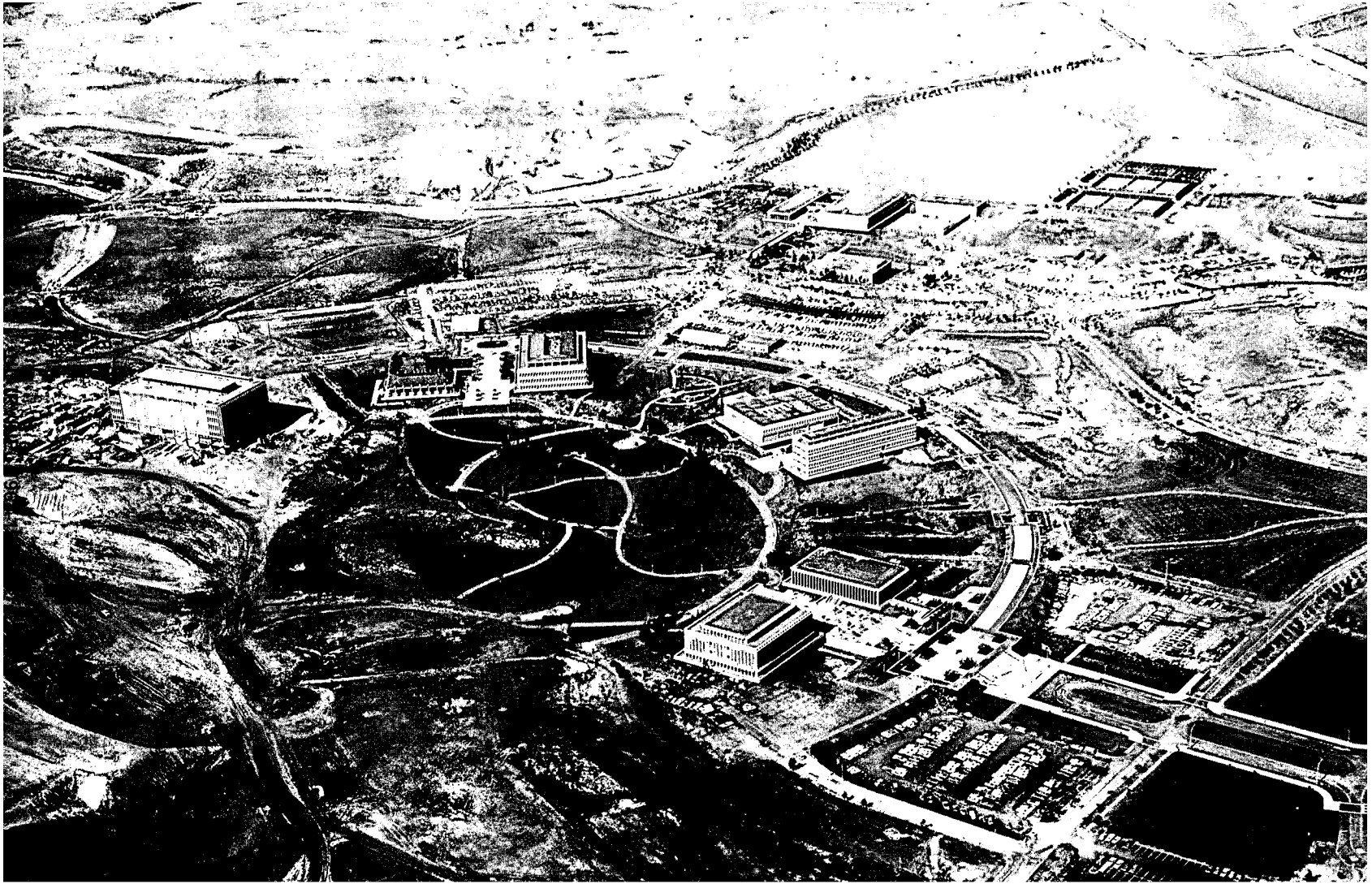

THE ACADEMIC PLAN

ROGER W. RUSSELL
Vice-Chancellor Academic Affairs

The faculty of the University of California, Irvine believes that education is a continuing process, not the simple sum of any particular number of years of formal work, and that a university fulfills its purpose when its students learn how to learn. The faculty recognizes that its own intention to help students learn cannot be achieved unless, first, the student understands that the primary responsibility for learning is his own, and, second, there is certainty that the student's time is not being squandered.

It follows that the academic program should include only such curricula as can be most effectively offered in a university environment or are necessary to the student's pursuit of a liberal education. It follows also that academic progress should be thought of not merely, or even necessarily, in terms of courses taken, but in terms of the acquisition of competence and knowledge and the growth of intellectual integrity and creative power. The faculty, therefore, has adopted the principle that credit for many courses can be achieved by means other than the actual taking of the formal course.

Further, by refusing to stipulate a large and complex system of university and college requirements, the faculty has indicated that it envisages many possible avenues by which the student may reach the proper goals. The faculty, in its advisory capacity, will encourage each student to avoid extremes of narrow specialization and superficial generalization, to plan a coherent program with maximum opportunity for independent study, and to use whatever method of instruction and study is most stimulating, efficient, and generally suitable to his subject and to his own abilities.

REQUIREMENTS FOR THE BACCALAUREATE

The faculty will expect each student to demonstrate by course work, by examination or by other means established by the faculty that he has met the requirements of the University, the School and the departmental or interdepartmental program to which he belongs.

University Requirements:

1. English — Every undergraduate must demonstrate an acceptable level of ability in English composition. This requirement may be met 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 600 or higher in the CEEB Achievement Test in English composition, *or*
   (c) Achieving a score below 600 but above 470 in the CEEB Achievement Test in English Composition and submitting an acceptable Subject A Writing Sample, *or*
   (d) Entering the University in Advanced Standing and submitting an acceptable Subject A Writing Sample, *or*
   (e) Entering the University with credentials showing the completion of an acceptable college-level course in English Composition with a grade of C or better.

The Subject A Writing Sample, which is constructed by the Subject A Committee, is administered at centers throughout the state on the last Saturday in April, and is also offered on every campus at the opening of each quarter. A fee of $5 is charged for the Writing Sample. Students who have not been notified of their score in the Achievement Test in English Composition at the time of the April Writing Sample should not take the Writing Sample until the opening of their first quarter in the University, if it is then necessary.

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.

2. American History and Institutions
   (a) Passage of an examination in the subject, *or*
   (b) Presentation of a certificate of completion of the requirement at another California institution.

Breadth Requirements:

1. Course work in three schools outside the major school. The 3-3-3 requirement: Students who complete University Studies 1, 2 and 3 must take three courses in each of three outside schools.

The 6-3-3 requirement: Other students must take six courses in one outside school and three courses each in two other outside schools.
(Please note exceptions to the above requirements on page 15 for the School of Engineering.)

2. Credit for 45 courses, earned by examination, by other evaluation, or course work.
3. A grade average of at least C.
4. Credit, earned in residence on the Irvine campus, for the last three quarters of work immediately preceding graduation. An exception to this rule is allowed in the case of students enrolled in the Education Abroad Program, who may be allowed to complete 35 of the last 90 units, including the final 12 units, in residence.

Proficiency in English & Foreign Languages

There are no general requirements in English composition for all students at UCI (though it is required by some schools), but the ability to write well is a basic requirement for all course work. Students who are reasonably competent in the use of English would profit from additional study with the aim of further improving their writing. Students who transfer elsewhere from UCI should have taken English composition, since formal instruction in this subject is a graduation requirement of almost all universities.

There are no general requirements in foreign languages for all students at UCI (though it is required by the School of Humanities and the School of Physical Sciences), but the ability to read one or more foreign languages is a requirement of most graduate schools. Students who transfer elsewhere from UCI should have included a foreign language in their programs, since knowledge of a foreign language equivalent to two years of college-level is a requirement for the baccalaureate in almost all colleges of arts, letters, and science, including those of the other campuses of the University of California.

School, Departmental and Interdepartmental Requirements:

As soon as he has determined the area of his concentration, and not later than the beginning of the junior year, the student should enter one of the schools of the University, having made certain that he has the background and the preparation necessary to accomplish junior and senior work in that school. Each school specifies graduation requirements in addition to those specified by

the University. Prerequisites for work in each school and the school and departmental graduation requirements are listed below:

The School of Biological Sciences

Biological Sciences 101, 102, 103, 104, 105, 106, or 100A, B,C,D,E,F; one year of college-level physics; mathematics through differential and integral calculus; chemistry through organic chemistry; and a minimum of three biological sciences satellite courses.

The School of Fine Arts

Art: One year's work in visual fundamentals; one year's work in the history and theory of art; six junior-senior studio courses; five junior-senior courses in the history and criticism of art; three courses in fine arts outside of the departmental major.

Dance: Four years' studio work in ballet and contemporary dance; dance notation; one year's work in theories of dance; two courses in acting; four junior-senior courses in the theory and history of dance, including 120A, 120B, 120C; three junior-senior courses in choreography; and participation in performances. Dance majors must complete Ballet IV, Free Style III, and Jazz II to graduate. All transfer students must take placement examinations.

Drama: One year's work in the development of dramatic art (40ABC); one year in acting (30ABC); *Drama* 100ABC; four junior-senior studio courses; four junior-senior courses in the history and criticism of drama; three courses in fine arts outside the departmental major, including two consecutive quarters of dance; and participation in at least two productions a year.

Music: Two years' work in theory: *Music* 5 ABC; *Music* 15 ABC; one year's work in the history and literature of music; one year's work in counterpoint; one year's work in form and analysis; three junior-senior courses in the history and criticism of music; command of piano; three courses in fine arts outside the departmental major; participation in the chorus, or the 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.

At the commencement of the student's freshman year he will be given an entrance examination to determine whether he meets the requirements of the department as stated below.

After two years, the faculty will meet as a jury to determine whether the student is making sufficient progress to qualify him as an upper division music major. All transfer students must take placement examinations.

Voice Majors: Recommend at least two years private study and/or participation in choral or orchestral ensemble and facility at the keyboard. Background in Italian, French, and German Art Songs is recommended.

Piano Majors: The requirements for an entering piano major are that the candidate should have mastered a Haydn or Mozart Sonata, a two-part invention of Bach, and all the major and minor scales and arpeggios.

Woodwinds: Sustained tone production, precise intonation over a dynamic range from *pianissimo* to *fortissimo*, control of breath, tongue, and double and triple tongue attacks over the entire range of the instrument, all major and minor scales and arpeggios, *legato* and *staccato*, commensurate with the range and technique of the instrument, are required. The student should be able to play and read a repertoire of a difficulty comparable to the earlier symphonies of Haydn, Mozart, Beethoven, and Schubert, and should demonstrate knowledge of the sonata literature for his particular instrument.

Brass: Essentially the same requirements as for woodwinds.

Percussion: Mastery of rudimentary drum techniques and a knowledge of the piano comparable to grade three is required.

Strings: Clear tone production, precise intonation with and without vibrato, controlled vibrato, slurred, *detache*, *loure*, *staccato*, and simple *spiccato* bow strokes, knowledge of all major and minor scales and arpeggios are highly desirable. The student should also be able to satisfy the same general repertoire requirements listed above under woodwinds.

Fine Arts (interdisciplinary major): Any two of the following programs plus three junior-senior studio courses and participation in productions, concerts, or exhibits. Interdisciplinary majors must have the approval of the departmental chairman involved.

Art: One year's work in visual fundamentals; one year's work in the history and theory of art; three junior-senior courses.

Dance: One year's studio work in ballet; one year's studio work in contemporary dance; two courses in the history and criticism of dance; three junior-senior courses.

Drama: One year's work in the development of dramatic art; one course in acting; one course in scene design; one course in costume design; three junior-senior courses.

Music: Command of piano; one year's work in theory; one year's work in the history and literature of music; three junior-senior courses.

The School of Humanities

One of the lower-division English sequences: English 5, 10, 15; English 22, 23, 24, or CL 50A-B-C. Competence equivalent to two years of college work in a single foreign language; three courses in History; two courses in Philosophy.

American Studies: History 50A-B-C; English 100 and two courses in American Literature; History 179 (America in World Perspective); three additional courses at the upper-division level with American emphasis (including a senior thesis tutorial) in either English, History or another departmental subject field approved as relevant by the directors of the program. In addition, students are urged to take or audit CL 101 (Studies in Criticism).

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

Greek Major Requirements: Greek 2A-B-C; Greek 10; eight courses on the Greek 100 level or above, including Greek 102A-B-C, but excluding Greek 150; Latin 150.

Latin Major Requirements: Latin 2A-B-C; Latin 10; eight courses on the Latin 100 level or above, including Latin 102A-B-C, but excluding Latin 150; Greek 150.

Classics Major Requirements: Greek (or Latin) 2A-B-C; Greek (or Latin) 10; four courses on the Greek (or Latin) 100 level or above, excluding Greek (or Latin) 150; Latin (or Greek) 1A-B-C; Latin (or Greek) 2A-B-C; one course on the Latin (or Greek) 100 level or above, excluding Latin (or Greek) 150.

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.

About 12 literature or allied courses in addition, of which ten must be upper-division: normally these will include CL 100A, CL 100B, CL 101, either CL 102 or CL 103; suitable upper-division course work in the literature of a foreign language; appropriate study in English and American literature; and further study in literature or allied fields as recommended by the advisor. Passing performance in the Senior Comprehensive Examination.

English: English 5, 10, 15; two courses numbered below 100; CL 100A twice, from different instructors, on different topics; CL 100B once; CL 101; English 102, three times (on different topics); two other departmental courses numbered above 100 (on different topics); one course in a foreign literature where texts are read in the original language. Students electing a writing emphasis will be expected to take perhaps one less literature course but more total courses in the department than the conventional English major. All students will be required to pass the Senior Comprehensive Examination.

Foreign Languages and Literature: Two courses in composition and grammar; one course in phonetics; one course in civilization; a minimum of nine courses in literature of which six must be at the junior-senior level; one course in linguistics; the senior comprehensive examination for German and Spanish majors.

History: Any two of the Civilization Survey sequence (six courses); History 100 and 101; minimum of four courses listed under Periods, Themes, and Topics; one course in Comparative History; Senior Project (two course sequence, choice of subject).

Linguistics: An interschool program in Linguistics is now being prepared. Courses in Introduction to Linguistics, Historical Linguistics, and Phonology-Morphology have already been given. These plus such courses as Syntactic analysis; Field Methods in Lingu-

istics; and Computational Linguistics will form the basis of an undergraduate program available to students in Humanities, Social Sciences, and Computer Sciences. Humanities students will complete their major with appropriate courses in foreign languages, English and Philosophy.

Philosophy: History of Philosophy 20A-B-C and six junior-senior courses including metaphysics and epistemology.

The School of Physical Sciences

Knowledge of Russian, German, or French equivalent to that gained in six quarters of instruction; ability to express ideas in written English with clarity and precision.

Chemistry: One year of general chemistry, *Chemistry* I or II or equivalent; one year of organic chemistry, *Chemistry* 51 or equivalent; three one-quarter courses in quantitative chemistry, *Chemistry* 71, *Chemistry* 151, and *Chemistry* 152, or equivalent; three courses in chemistry elected from those numbered 160-233 of which *Chemistry* 180 may not be counted more than twice; in addition, twelve courses to be chosen from the offerings in mathematics, physics and biological sciences including: (a) at least one year of calculus, and (b) at least one year of college-level physics for which calculus is either a prerequisite or corequisite. (Neither *Physics* 3 nor *Information and Computer Science* 1 meet the above requirements.)

Mathematics: Two years (six courses) of calculus, plus nine upper-division courses in mathematics including three of either *Mathematics* 120A-B-C or 140A-B-C and at least one of the other. (The 120-140 ruling affects only those students who enter the junior year in 1968-69 or after.)

Physics: *Physics* 5A, 5B, 5C, 5D, 5E, and eight courses numbered between 110 and 190, including two quarters of advanced laboratory (151-154); *Mathematics* 2ABC, 3ABC, and 100ABC. Recommended options: *Chemistry* 1ABC; *Biological Sciences* 1ABC.

The School of Social Sciences

Requirements for the degree in social science are stated generally in terms of knowledge possessed rather than courses taken.

In planning his program, however, the student may find it useful to think in terms of four clusters of work:

Introductory work: Social Science 1 and two other one-digit courses in social science.

Advanced work: Six upper division courses in the School of Social Sciences.

Senior project: A three-course educational program during the senior year, as approved by the student's advisor.

Quantitative methods: Six courses in mathematics (*Mathematics* 5A, 5B, 5C, 6A, 6B, 6C; or 2A, 2B, 2C, 3A, 3B, 3C); one course in computer science (*Information and Computer Science 1*); two courses in additional mathematics, statistics, or mathematical social science.

A student earns a degree within one of the programs in the School by satisfying these requirements within constraints specified by the Program and by satisfying any additional requirements imposed by the Program.

A student who has qualified for a degree in social science may receive a degree in one of the disciplines (e.g., anthropology, economics, geography, political science, psychology, sociology) if he, in addition, passes a general examination in the discipline.

The School of Engineering

The faculty expects each undergraduate student to meet the requirements of the University and of the School of Engineering as follows:

1. Credit for 45 courses including the following:
   (a) Engineering: 100A, 100B, 101A, 101B, 102, 103, 104A, 104B, 104C plus 6 electives.
   (b) Mathematics: Nine (9) courses, three (3) of which must be upper-division courses.
   (c) Basic science (physics, chemistry, biology): Eight (8) courses from two (2) sciences.
   (d) Fine Arts, Humanities, and Social Science: Nine (9) courses, six (6) in one division, and three (3) in another.
   (e) Information and Computer Science: ICS I.

Department of Information and Computer Science

Mathematics: Calculus (3 quarters); linear algebra (1 quarter); introduction to discrete structures (1 quarter); numerical calculus (1 quarter); probability and statistics (3 quarters) or algebra (3 quarters).

Introduction to Programming: Introduction to digital computation (1 quarter); computers and programming (1 quarter); information structures (1 quarter).

Advanced Courses: Programming languages and systems (2 quarters); computer organization (2 quarters); formal models in information and computer science (2 quarters).

Senior Seminar (3 quarters).

Course Numbering System

Throughout the catalogue, the following course numbering system is used:

1-99	Lower Division
100-199	Upper Division
200-over	Graduate Division

THE SCHOOL OF BIOLOGICAL SCIENCES

JAMES L. MCGAUGH
Dean

The School of Biological Sciences reflects the new concepts of biology in both its curriculum and its research program. The faculty, the methods of teaching, the content of courses, and the facilities are dedicated to providing each student with the opportunity to avail himself of the ever-increasing knowledge of the facts and principles of biology. At both the graduate and undergraduate levels we maintain continuing interaction between classroom education and research, between departments and individuals. The curriculum is designed to meet the present needs not only of the biology major but also of students in other disciplines. It is designed for the professional biologists as well as for those aspiring to other related professions such as agriculture and medicine, and for those desiring a continuing education. In keeping with the responsibilities of the University in research, the School encourages rigorous research programs. We strongly believe that excellence in research endeavors is essential for effective teaching programs. In addition to teaching and research, the School takes seriously its additional objective to engage in public service in the spirit of the Land Grant mandate.

The undergraduate courses in the biological sciences are presented as a continuum in a central Core program, surrounded by satellite courses for those undergraduates with specialized interests. The benefits of both unity and diversity are realized by having the solidity of the undergraduate Core program and the diversity of the departmental specializations at the upper division and graduate level.

The major in biological sciences should understand the tremendous impact biology now exerts upon matters of public policy and society as well as the importance of society's reaction to these discoveries. Consequently, we expect biological sciences majors to avail themselves of the broad opportunities allowed by the curriculum to study in other Schools of the University. We hope also that students in other disciplines realize that a knowledge of the basic principles of the life sciences is necessary for a proper under-

standing of the world in which they live. The impact of the biological sciences upon human affairs during the coming years is certain to be very great. 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 esthetic senses.

More detailed information, including course descriptions, is offered in a separate publication "A Guide to the Biological Sciences," which may be obtained from the School of Biological Sciences.

UNDERGRADUATE PROGRAM

At the undergraduate level the biological sciences should be viewed as an integrated area of study. The undergraduate program at UCI is designed to provide students with a solid overview of unifying concepts of modern biology. The School offers an integrated Core of courses for all biology students; one which provides the essential background for subsequent graduate specialization in many areas, including the biological sciences, teaching, the health sciences, agriculture, forestry, fisheries, and other applied fields. The introductory courses are designed to make the biological sciences meaningful and interesting to students whose majors are in other disciplines.

Biological sciences majors should begin as soon as possible to fulfill their requirements in the physical sciences and mathematics.

In addition to the introductory biological sciences courses and the Core curriculum, advanced specialized courses (on the junior-senior level) are offered in the School of Biological Sciences.

The curriculum of the School, like its subject matter, is continually evolving.

Honors Program

At the end of each quarter a Dean's List is posted on the Biological Sciences Bulletin Board of all of our students who have made a GPA of 3.5 or better during the preceding quarter.

The Biological Sciences Scholastic Honor Society is composed of students who maintain an overall Grade Point Average of 3.5 or better while carrying a minimum of three academic courses, taken on a grade basis, for three or more quarters. Students are elected to provisional membership. Those who maintain this high academic achievement until graduation will have their names

inscribed on a permanent plaque to be installed in the Natural Sciences Building.

As part of the Honors Program the School offers an invitational Honors Course (Biological Sciences 192H—Honors Seminar in General Biology). See description on page 34. Any eligible junior or senior interested in the Honors Program may be considered by submitting his name to the Biological Sciences Office of Student Affairs. The contents of this course may vary from year to year.

All honors students majoring in the biological sciences are eligible to enroll in other honors or special courses (197H, 198H, or 199).

Graduation with Honors in the Biological Sciences may be recommended for those who maintain their standing as honor students throughout their last two years and satisfactorily complete honors course 198H.

Pre-Professional Training

A student who plans to enter a school of dentistry, medicine, nursing, veterinary science, etc., may receive his required pre-professional training on the Irvine campus. This pre-professional training may be accomplished by (a) completing the professional major (i.e., the Core curriculum) in biological sciences, or (b) majoring in any school or department, but fulfilling concurrently the specific course requirements of the dental, medical, nursing, or veterinary school he expects to attend. A few schools request specific additional requirements (e.g., English, foreign language, physical chemistry, etc.); A STUDENT SHOULD, THEREFORE, CHECK EARLY WITH THE PROFESSIONAL SCHOOL HE SEEKS TO ENTER. Some information in these fields is available in the Biological Sciences Office of Student Affairs.

More than 90 percent of the students admitted to medical schools in the United States have attained the B.A. or B.S. degree, and a large percentage of those admitted to dental schools have had three or more years of undergraduate work — this despite the fact that technically it is possible under the regulations of the American Medical Association and the American Dental Association for a school to admit students who have had as few as two years premedical or predental training. Leaders in dental, medical, and veterinary education urge prospective students to arrange

their programs so that they will obtain a liberal education, since the humanities and social sciences are not offered by the professional schools. They, therefore, 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.

Transfer Students

Students who are planning to transfer to UCI from other accredited institutions are advised to elect the more broadly-based introductory biological courses and the physical science prerequisites.

Advisors and Advising System

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 very simply by making a request for a change in the Biological Sciences Student Affairs Office.

Examinations

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.

At the present time, Biological Sciences courses 1A-B-C are the only ones in the School that may be taken by examination.

Courses in Other Schools at UCI

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 science students are encouraged to study the social sciences, humanities, and fine arts. Therefore, we strongly recommend courses in Philosophy (Elements of Logic 10 and Ethics 15), and History of Science (History of Scientific Thought and Culture 90A and 90B.

While English is not a required subject at Irvine, the ability to write reports and to read with comprehension is essential for successful work in biology. Students who lack these skills are strongly advised to take formal instruction in writing.

A foreign language is not required for graduation. However, the ability to read the literature of science in French, German, and Russian is desirable, and for students intending to do graduate work, mastery of two of these languages in most cases is essential for advanced graduate work.

Biology Club

All biological science majors are encouraged to affiliate with this Club, and all Irvine students who are interested in biology are invited to become members or to attend functions of the Club. The Club is responsible for coordinating many of the extracurricular activities of students in biology.

Continuing activities of the Club include: supplying a new hospital in Turtle Bay, Mexico, with medical equipment from the Orange County area; acting as guides for tours through the Natural Science Building; field trips to the desert, mountains, offshore islands, and Baja, California. The Club has also begun a conservation drive to ensure the sustained usage of local tide pools. A winter snow trip to the mountains has become an annual event.

One meeting in the Fall Quarter of each year will be devoted to information on various graduate schools and the procedures to be followed to obtain admission.

GRADUATE PROGRAM

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 various departments within the School encourages interdisciplinary approach to scientific problems.

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

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

All students studying for advanced degrees in the School of Biological Sciences receive guided teaching experience. Normally, during the early years of graduate training, students serve as teacher apprentices working under the direction of advanced teaching assistants and faculty. Advanced graduate students work closely with faculty in the planning and execution of the teaching program. The amount and exact nature of the teaching experience varies from department to department within the School, according to the teaching programs of each department.

In the first year the graduate student enrolls in a three-quarter course given by the School. These courses take the form of a colloquium presented by the faculty members from the School of Biological Sciences and relate the speakers' research interests to the context of biology as a whole. In some departments, satisfactory completion of this three-quarter sequence constitutes passing of the first level of competence in graduate studies.

Although the graduate programs vary in detail within the departments of the School, the outline given here will serve as general guidelines.

Master of Arts in the Biological Sciences

The language requirement for the M.A. degree is a reading knowledge of one foreign language, usually French, German, or Russian. On the recommendation of the student's advisor, with approval of the departmental chairman, other languages or training in other special skills may be substituted.

Plan I: Thesis Plan

This plan requires the student to complete 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 of these courses must be in the 200-series in the student's specialization. This plan is terminated with a comprehensive final examination in the major subject; its kind and conduct to be determined by the department concerned.

Doctor of Philosophy in the Biological Sciences

Students who are planning to receive a Ph.D. degree are normally encouraged to do so without first attaining the M.A. The language requirement will normally be satisfied by examining the student with regard to his reading proficiency in two foreign languages. German, French, or Russian are acceptable in meeting language requirements. On the recommendation of the student's advisor, with approval of the departmental chairman, other languages, or training in other special skills may be substituted for one of the language requirements.

First Level of Competence:

The graduate student attains the First Level of Competence by completing the three-quarter colloquium sequence during his first year of graduate residence. Some departments require oral or written examinations in addition to the colloquium.

Second Level of Competence:

The Second Level of Competence 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.

This examination completed, the student is advanced to candidacy, and he may formally begin his thesis research. A thesis

covering this research is submitted and defended during the final year of graduate study. (For specific graduate programs, contact the graduate advisors of the various departments.)

RESEARCH UNITS

The Irvine Arboretum

The Irvine Aboretum was constituted by the Academic Senate and approved by the Chancellor in June 1967. The Arboretum is administered by the School of Biological Sciences. Plans for this botanic garden facility envisage the treatment of the whole campus under scientific management. Records will be kept of the location of all material planted on the campus, and particular areas will be reserved for experimental and teaching work. A number of plant houses will be constructed; several are already in operation.

Museum of Systematic Biology

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

The Center for Pathobiology

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

THE FACULTY

JAMES L. MCGAUGH, *Dean*
PATRICK L. HEALEY, *Associate Dean*

Department of Molecular and Cell Biology

DANIEL L. WULFF, Ph.D. California Institute of Technology; *Acting Chairman of the Department and Associate Professor of Biochemistry: Biochemical genetics.*

GALE A. GRANGER, Ph.D. University of Washington; *Assistant Professor of Biochemistry: Immunology, medical microbiology, cell biology.*

CALVIN S. MCLAUGHLIN, Ph.D. Massachusetts Institute of Technology; *Associate Professor of Biochemistry: Biochemistry, nucleic acids, protein synthesis.*

WENDELL M. STANLEY, JR., Ph.D. University of Wisconsin; *Assistant Professor of Biochemistry: Biochemistry of macromolecules.*

CLIFFORD A. WOOLFOLK, Ph.D. University of Washington; *Associate Professor of Microbiology: General microbiology, enzymology.*

Department of Organismic Biology

GROVER C. STEPHENS, Ph.D. Northwestern University; *Chairman of the Department and Professor of Biological Sciences: Comparative animal physiology.*

JOSEPH ARDITTI, Ph.D. University of Southern California; *Assistant Professor of Biological Sciences: Plant physiology, orchid biology.*

ERNEST BALL, Ph.D. University of California, Berkeley; *Professor of Biological Sciences: Developmental morphology of higher plants.*

RICHARD D. CAMPBELL, Ph.D. The Rockefeller Institute; *Assistant Professor of Biological Sciences: Developmental biology.*

PETER S. DIXON, Ph.D. University of Manchester; *Professor of Biological Sciences: Algology, marine phycology.*

RALPH W. GERARD, M.D., Rush Medical, Ph.D. University of Chicago, D.Sc., LL.D., Litt.D.; *Professor of Biological Sciences, Dean of the Graduate Division, Director of Special Studies: General physiology and neurophysiology.*

PATRICK L. HEALEY, Ph.D. University of California, Berkeley; *Assistant Professor of Biological Sciences, Associate Dean of School: Ultrastructure, plant and cell development.*

STUART M. KRASSNER, Sc.D. Johns Hopkins University; *Assistant Professor of Biological Sciences: Parasitology, invertebrate biology.*

EDWARD A. STEINHAUS, Ph.D. Ohio State University, Sc.D.; *Professor of Pathobiology, former Dean of the School, Director of the Center for Pathobiology: Pathobiology, biology and social progress.*

Department of Population and Environmental Biology

ARTHUR S. BOUGHEY, Ph.D. Edinburgh University; *Chairman of the Department, Professor of Biological Sciences, and Director of the Museum of Systematic Biology: Ecology, biogeography, anthropomorphic disturbance of ecosystems.*

PETER R. ATSATT, Ph.D. University of California, Los Angeles; *Assistant Professor of Biological Sciences: Biosystematics, genetics and ecology of plants.*

GILBERT W. BANE, JR., Ph.D. Cornell University; *Assistant Professor of Biological Sciences: Ichthyology, marine ecology.*

DAVID W. GOODALL, Ph.D., D.Sc. University of Melbourne; *Professor of Biological Sciences: Statistical ecology, numerical taxonomy.*

KEITH E. JUSTICE, Ph.D. University of Arizona; *Associate Professor of Biological Sciences: Computer simulated models, genetics and ecology of animal populations.*

RICHARD E. MACMILLEN, Ph.D. University of California, Los Angeles; *Associate Professor of Biological Sciences: Physiological animal ecology.*

Department of Psychobiology

RICHARD E. WHALEN, Ph.D. Yale University; *Chairman of the Department and Associate Professor of Psychobiology: Neural and endocrine bases of behavior.*

CARL COTMAN, Ph.D. Indiana University; *Assistant Professor of Psychobiology: Neurochemistry, molecular psychology.*

JAMES L. MCGAUGH, Ph.D. University of California, Berkeley; *Professor of Psychobiology and Dean of the School: Biological bases of learning and memory.*

ROGER W. RUSSELL, Ph.D. University of Virginia; *Professor of Psychobiology, Vice-Chancellor of Academic Affairs: Biological bases of behavior.*

RICHARD F. THOMPSON, Ph.D. University of Wisconsin; *Professor of Psychobiology: Neurophysiological bases of behavior.*

MARCEL VERZEANO, M.D. University of Pisa Medical School; *Professor of Psychobiology: Neurophysiology.*

DAVID M. WARBURTON, Ph.D. Indiana University; *Assistant Professor of Psychobiology: Neurochemical bases of behavior.*

NORMAN M. WEINBERGER, Ph.D. Western Reserve University; *Associate Professor of Psychobiology: Neural bases of arousal and attention.*

COURSES OF STUDY — UNDERGRADUATE

Introductory General Biology
Lecture and laboratory. STAFF
This three-quarter course is taken by nonmajors (freshmen through seniors). The purpose is to introduce students to the general framework of knowledge of biology and to its underlying philosophy, with special attention to the impact of biology on human affairs. Among the subject-matter to be included will be the diversity of life; the anatomy and physiology of selected organisms; genetics and development; biological regulation; evolution; ecosystems.

Biological Sciences 1A (1) fall
Prerequisite: None.

Biological Sciences 1B (1) winter
Prerequisite: Biological Sciences 1A.

Biological Sciences 1C (1) spring
Prerequisite: Biological Sciences 1B.

Undergraduate Core Curriculum — Required of All Biological Sciences Majors

Three 1-hour lectures and one 3-hour lab per week STAFF

The Biological Sciences Core consists of unified concepts in the biological sciences. The following areas are covered: The study of cells in morphological terms, classical genetics, evolution — population biology, taxonomy and phylogenetics, principles of ecology, population dynamics, fertility and reproduction, organic evolution, man and his environment; neural, endocrine, and genetic bases of animal behavior, principles of behavior adaptation; gross and microscopic anatomy with emphasis on comparative and functional relationships, physiology of plants and animals, symbiosis; growth and development of plants and animals, embryology, heredity; cell biology, physiochemical organization of plant, animal, and bacterial cells, including the principle of cell genetics and energetics, introductory microbiology, virology, and immunology, cell tissue and organ structure; general biochemistry, the living cell as a molecular system, introduction to the chemistry and metabolism of carbohydrates, proteins, lipids, and nucleic acids with emphasis on biosynthetic routes and metabolic reactions producing energy.

Biological Sciences 100A (1) fall
Prerequisite: Concurrent enrollment in, or completion of, Chemistry 1A. The student should also be taking or planning to take the required math and physics courses.

Biological Sciences 100B (1) winter
Prerequisite: Biological Sciences 100A.

Biological Sciences 100C (1) spring
Prerequisite: Biological Sciences 100B.

Biological Sciences 100D (1) fall 1969
Prerequisite: Biological Sciences 100C.

Biological Sciences 100E (1) winter 1970
Prerequisite: Biological Sciences 100D.

Biological Sciences 100F (1) spring 1970
Prerequisite: Biological Sciences 100E.

For those students who have already completed Bio-

logical Sciences 101, 102, and 103 under the plan followed in the 1967-68 academic year, for the year 1968-69 only, due to changes in the sequence of our Core curriculum, the following courses will be offered:

Biological Sciences 104 (1) fall
(Psychobiology) MR. WHALEN AND STAFF

Biological Sciences 105 (1) winter
(Population and Environmental Biology)
MR. BOUGHEY AND STAFF

Biological Sciences 106 (1) spring
(Molecular Biology) MR. MCLAUGHLIN, MR. STANLEY AND STAFF

Biological Sciences Satellite Courses

120 *Microbial Genetics* (1) spring MR. WULFF
A consideration of genetics at the molecular and cellular level. Particular emphasis will be placed on microbial genetics as model molecular systems. Prerequisite: Biological Sciences 102 or consent of instructor.

121 *Immunology* (1) winter of odd years MR. GRANGER
The following general topics will be considered: (a) host immune response with regard to bacterial viral, tumors and transplantation immunity, (b) the structure and function of antibody molecules, (c) important current theories; i.e., antibody formation, oncogenesis, tolerance, etc. Prerequisite: Biological Sciences 1A or equivalent and a minimum of one quarter of chemistry. Biological Sciences 101 desirable.

122 *Microbial Physiology* (1)
winter of odd years MR. WOOLFOLK
Lectures will cover biochemical taxonomy and cytology of microorganisms, comparative metabolism, regulatory mechanisms in metabolism. Prerequisite: Organic chemistry and participant in Core program.

130 *Invertebrate Zoology* (1) winter MR. KRASSNER
Lecture and laboratory. Structure and comparative biology of invertebrates. The basic morphological organization of the phyla will be discussed and illustrated by study of living marine material where practicable. Prerequisite: One year elementary biology, zoology, or botany; upper division or graduate registration and consent of instructor.

131 *Comparative Animal Physiology* (1)
fall of odd years MR. STEPHENS
Lecture and laboratory. A comparative approach to the analysis of systems mediating homeostasis and behavior in the animal kingdom. Prerequisite: One year biology and organic chemistry, upper division or graduate registration and consent of instructor.

132 *Comparative Morphology of Vascular Plants* (1) spring
MR. BALL
Lecture and laboratory. Comparative structure, evolution and general biology of major groups of vascular plants. Laboratory work will be supplemented by field trips to different habitats. Prerequisite: One semester botany or biology; upper division or graduate registration and consent of instructor.

133 *Symbiosis* (1) spring MR. KRASSNER
Lecture and laboratory. A general laboratory and lecture introduction to the variety of symbiotic relations ranging from parasitism to mutualism. Prerequisite: One year biology (one semester organic chemistry desirable); upper division or graduate registration and consent of instructor.

134 *Cytology* (1) fall MR. HEALEY
Lecture. Ultrastructure, functions, possible origins and modes of development of cellular organelles. Current literature will be stressed. Prerequisite: Biological Sciences 101 or equivalent.

134L *Cytology Laboratory* (1)
winter of odd numbered years MR. HEALEY
Laboratories will illustrate methods of cellular study. Prerequisite: Biological Sciences 134.

135 *Introduction to Plant Physiology* (1)
spring MR. ARDITTI
Lecture and laboratory. Fundamental processes of plant functions. Metabolism of water, nitrogen, minerals, carbohydrates, amino acids, proteins, lipids, and vitamins. The pigments, reactions and factors affecting photosynthesis. Growth, development and flowering as related to and affected by auxins, gibberellins, phytokinins, light and temperature. Flower and fruit physiology. Prerequisite: Biological Sciences 1B or 101, or equivalent courses in general botany or biology, or consent of instructor.

137 *Morphology of Non-vascular Plants* (1)
winter MR. DIXON
Lecture and laboratory. A comparative survey of the structure of algae, fungi and bryophytes. In addition, the course will prove an introduction to morphogenesis in lower plants, with particular emphasis on such concepts as polarity and coordinated development through control of cell division and cell enlargement. Prerequisite: Biological Sciences 101 or consent of instructor.

141 *Field Biology* (1) spring MR. ATSATT
Lecture, laboratory, field. A survey of selected plant families, illustrating the role of floral biology (sex in plants) and agencies of pollination (wind, water, insects, birds, and bats) in angiosperm evolution. Each student will choose and complete a short research problem, normally one that is complementary to the topics given in lecture. Prerequisite: Biological Sciences 1B and 1C or equivalent or consent of instructor.

143A-B Sec. 1 *Marine Ecology Lecture* (½-½)
fall of even years, winter of odd years MR. BANE
Physical, chemical and biological factors characterizing the marine environment; studies of the interaction of variables at the individual, population and community levels; factors relating to population cycles, the transfer of energy, photosynthesis, field methods of collecting, preserving, and identifying marine organisms. Prerequisite: An elementary knowledge of the biological sciences. Both A and B must be taken to receive credit. No PNP permitted. 143A-B Sec. 1 may be taken without Sec. 2, the lab portion of the course.

143A-B Sec. 2 *Marine Ecology Laboratory* (½-½)
fall of even years, winter of odd years MR. BANE
Prerequisite: Concurrent enrollment in 143A-B Sec. 1. Both A and B must be taken to receive credit. No PNP permitted.

144A-B *Ichthyology* (1-1)
fall of odd years, winter of even years MR. BANE
Lecture, laboratory, field. Taxonomy, morphology and identification of fishes; a study of the systematics of fishes from ostracoderms to osteichthyes; ecology, biology, and literature of fishes. Prerequisite: Registration for upper division work or graduate studies and consent of instructor.

Both courses must be taken to receive credit. No Pass-Not Pass permitted.

145A-B *Evolutionary Processes* (1-1)
fall, winter MR. JUSTICE, A; MR. ATSATT, B
Lecture, field. Of interest to both the biology major and the nonmajor with some elementary knowledge of biology. Although the process of organic evolution is the central theme of the course, other evolutionary topics such as the history of evolutionary thought, stellar evolution, chemical evolution, the origin of life, and man-made evolutionary systems are also considered. Prerequisite: Biological Sciences 1A-B-C or equivalent preparation in general biology. 145A is prerequisite for 145B, but credit is given for 145A without 145B.

146 *Human Genetics* (1) spring MR. JUSTICE
Lecture and laboratory. Intended to provide majors in social and medical sciences, as well as biology majors, with a basic knowledge of human genetics. Review of Mendelian genetics, genetic bases and modes of expression of certain human traits and defects, genetics of blood proteins, population genetics, clinical genetics, and genetic counseling. Prerequisite: Elementary knowledge of biology; registration for upper division or graduate studies.

147 *Vegetation Analysis* (1)
spring of odd years MR. GOODALL
Lecture, laboratory, field. The function of ecosystems, the nature of succession and the climax. The classification of natural communities, administrated in the field by reference to local vegetation. Prerequisite: A course in introductory ecology and consent of instructor.

148 *Theory of Natural Communities* (1)
winter of even years MR. GOODALL
Lecture, laboratory, field. A consideration of the function of ecosystems and the nature of succession and the climax. Examination of theoretical considerations related to the association between species in natural communities and their classification. Prerequisite: Consent of instructor.

149 *Population Ecology* (1) fall MR. BOUGHEY
Lecture, laboratory, field. Illustrates some modern concepts of population ecology by reference to local terrestrial animal and plant communities. Each student will select a limited research problem within this area. Prerequisite:

Biology 105, or equivalent course, and consent of instructor.

150 *Introduction to Psychobiology* (1) winter STAFF
Lecture. An introduction to the biological bases of behavior, including an analysis of the nervous system, and problems of instinct, learning, memory, motivation and arousal. Prerequisite: Relevant background, introductory psychology or biology. This course may not be taken by biological sciences majors.

151 *Undergraduate Seminar in Psychobiology* (1)
spring STAFF
A consideration of selected current research problems. Students will prepare and present papers. Prerequisite: Biological Sciences 104, or any psychobiology satellite course, upper division standing and consent of instructor.

153 *Animal Behavior* (1) spring of odd years MR. WHALEN
An analysis of the genetic and experimental determinants of animal behavior. Prerequisite: None.

154 *Learning and Memory* (1) MR. MCGAUGH AND
fall of even years MR. THOMPSON
A consideration of basic issues concerning the nature of behavioral plasticity and information storage, and their neural substrates. Prerequisite: Biological Sciences 104 or Psychobiology 150 or equivalent.

155 *Arousal and Attention* (1)
winter of even years MR. WEINBERGER
A consideration of the behavorial characteristics and neural bases of sleep, wakefulness, and attention. Prerequisite: Biological Sciences 104 or Psychobiology 150 or equivalent.

156 *Neurophysiology* (1) winter of odd years MR. VERZEANO
Lecture and laboratory. An introduction to the basic functioning of the nervous system including neuron physiology and sensory system processing. Prerequisite: Biological Sciences 104, 1 year calculus, 1 year physics, 1 year general chemistry.

180 *The Biological Sciences and Public Policy* (1)
winter MR. STEINHAUS
(Not intended to satisfy breadth requirements for nonmajors in the biological sciences.) A consideration of the impact of 20th century biological sciences upon public policy, the humanities, the arts, the social sciences, and other areas of human endeavor and personal conduct. Pre-

requisite: A college course in biological sciences and consent of instructor. To be taken on a Pass-Not Pass basis only.

192H *Honors Seminar in General Biology* (½) fall, winter, spring
HONORS COMMITTEE: MR. MCLAUGHLIN, CHAIRMAN
Selections for this course will be made toward the end of the Quarter preceding the enrollment period for the following Quarter. Students in this course participate in the 290 Biological Sciences Colloquium and take exams with that class. Enrollment by invitation only to eligible students. Usually taken in the junior year.

197H *Special Study for Honors Students* (1) fall, winter, spring
HONORS COMMITTEE: MR. MCLAUGHLIN, CHAIRMAN
Independent research and/or reading on selected subjects. Prerequisite: Enrollment limited to honors students with approval of Honors Committee.

198H *Honors Thesis* (1) fall, winter, spring
HONORS COMMITTEE: MR. MCLAUGHLIN, CHAIRMAN
Preparation of comprehensive thesis, incorporating studies undertaken in individual research. Enrollment by invitation only.

199A-B-C *Special Study for Advanced Undergraduate Students* (1-1-1) fall, winter, spring

BY CONSENT OF INSTRUCTOR

01	*Plant Physiology*	MR. ARDITTI
02	*Plant Symbiosis, Genetics, Biosystematics*	MR. ATSATT
03	*Ichthyology—Marine Ecology*	MR. BANE
04	*Ecology and Biogeography*	MR. BOUGHEY
05	*Developmental Biology*	MR. CAMPBELL
06	*Neurochemistry* (Seniors only)	MR. COTMAN
07	*Phycology*	MR. DIXON
08	*Quantitative Plant Ecology, Numerical Taxonomy*	MR. GOODALL
09	*Immunology*	MR. GRANGER
10	*Ultrastructure, Plant and Cell Development*	MR. HEALEY
11	*Computer Models and Genetics*	MR. JUSTICE
13	*Parasitology*	MR. KRASSNER

14	*Learning and Memory* (Seniors only)	MR. MCGAUGH
15	*Biochemistry — Nucleic Acids*	MR. MCLAUGHLIN
16	*Psychopharmacology* (Seniors only)	MR. RUSSELL
17	*Biochemistry — Macromolecules*	MR. STANLEY
18	*Comparative Animal Physiology*	MR. STEPHENS
19	*Brain and Behavior* (Seniors only)	MR. THOMPSON
20	*Neurophysiology* (Seniors only)	MR. VERZEANO
21	*Neurochemical Bases of Behavior* (Seniors only)	MR. WARBURTON
22	*Arousal and Attention* (Seniors only)	MR. WEINBERGER
23	*Hormones and Behavior* (Seniors only)	MR. WHALEN
24	*General Microbiology — Enzymology*	MR. WOOLFOLK
25	*Biochemical Genetics*	MR. WULFF
26	*Physiological Animal Ecology*	MR. MACMILLEN
27	*Developmental Morphology of Higher Plants*	MR. BALL
28	*Pathobiology, Biology and Social Progress*	MR. STEINHAUS

Sample Program for Biological Sciences Majors

The biological sciences major should make an attempt to gain a broad education, and as early as possible, should sample courses in other Schools to complete the 6-3-3 requirement. In participation in courses outside the School of Biological Sciences, two items should be considered: 1. Extra work in areas related to the biological sciences, and 2. Courses that are complementary to the biological sciences or exploratory in nature. All courses in *italics*, or their equivalents, are required for the baccalaureate in biological sciences.

	FALL	WINTER	SPRING
FRESHMEN	*Chem* 1A **Math* 2A or 5A Univ. Studies I **Breadth Requirement	*Chem* 1B *Math* 2B or 5B Univ. Studies II Breadth Requirement	*Chem* 1C *Math* 2C or 5C Univ. Studies III Breadth Requirement
SOPHOMORE	*Biol. Sci.* 100A *Org. Chem.* 51A *Physics* 3A Breadth Requirement	*Biol. Sci.* 100B *Org. Chem.* 51B *Physics* 3B Breadth Requirement	*Biol. Sci.* 100C *Org. Chem.* 51C *Physics* 3C Breadth Requirement
JUNIOR	*Biol. Sci.* 100D *Biol. Sci. Satellite* Elective Elective	*Biol. Sci.* 100E *Biol. Sci. Satellite* Elective Elective	*Biol. Sci.* 100F *Biol. Sci. Satellite* Elective Elective
SENIOR	Biol. Sci. Elective Biol. Sci. Elective Elective Elective	Biol. Sci. Elective Biol. Sci. Elective Elective Elective	Biol. Sci. Elective Biol. Sci. Elective Elective Elective

* The choice between the Math 2 or Math 5 series should be made in consultation with an advisor.

** Premed and predental students should plan on fulfilling the requirements of these schools; e.g. one year of English, possible foreign languages, or physical chemistry, psychology, etc.

COURSES OF STUDY — GRADUATE

The School of Biological Sciences

290A-B-C *School of Biological Sciences Graduate Colloquium* (½-½-½) fall, winter, spring STAFF

REQUIRED OF ALL FIRST-YEAR GRADUATE STUDENTS. Weekly colloquia will explore biological organization at different levels of complexity, from the molecule to the biosphere. They will emphasize the manner in which biological behavior at one level is dependent mechanistically upon the preceding level of organization.

Department of Molecular and Cell Biology

The activities of this department include the disciplines of cell biology, biochemistry, biophysics, microbiology, virology, cell physiology, molecular genetics, and cytogenetics, and molecular biology generally. Such subjects as cell growth and development, fine structure, physiochemical organization, cell pathology, homeostatic mechanisms (including energetics and steadistates), cell ecology, and evolutionary potential are among other emphases in graduate courses.

200A-B-C *Research in Molecular and Cell Biology*

(½-3 per quarter) fall, winter, spring

01	*Immunology*	MR. GRANGER
02	*Biochemistry — Nucleic Acids*	MR. MCLAUGHLIN
03	*Biochemistry — Macromolecules*	MR. STANLEY
04	*General Microbiology — Enzymology*	MR. WOOLFOLK
05	*Biochemistry — Genetics*	MR. WULFF

Prerequisite: Graduate registration and consent of the instructor.

201A-B-C *Seminar in Molecular and Cell Biology* (1-1-1)
fall, winter, spring MR. MCLAUGHLIN AND STAFF
Advanced study in various fields of molecular and cell biology. Topics will vary from year to year. Emphasis on recent literature.

202 *Advanced Microbiology* (1)
winter of even years MR. WOOLFOLK
Lecture and discussion including literature review and student reports. A study of the structure and function of representative microorganisms with emphasis on microbial physiology and enzymology. Prerequisite: Equivalency of Core or a general course in microbiology and organic chemistry and approval of staff.

204 *Biochemistry* (1) fall MR. MCLAUGHLIN, MR. STANLEY
Lecture and discussion including literature review and student reports. Study of advanced topics in biochemistry, including emphasis on enzymology, protein chemistry, nucleic acid chemistry and metabolism. Prerequisite: Equivalency of Core and approval of staff.

207 *Advanced Topics in Biochemistry* (1)
spring MR. STANLEY
Selected topics in advanced biochemistry including lectures and discussions. There will be coverage of concepts in recent literature of journals. Prerequisite: Open to graduate students or advanced undergraduates with consent of instructor.

208 *Physical Chemistry of Macromolecules* (1)
spring of odd years MR. MCLAUGHLIN, MR. STANLEY
Lecture and discussion concerning the techniques available for investigating the physical properties of biologically important macromolecules such as the proteins and nucleic

acids. Prerequisite: Basic calculus and thermodynamics and consent of instructor.

209 *Advanced Immunology* (1)
winter of even years MR. GRANGER
Seminar and lecture course with formal lectures and literature study in certain key areas of immunology. Will also include student reports and discussions of topics chosen by participating students in areas of their personal interest. Prerequisite: Immunology 121 and permission of instructor.

290A-B-C *Colloquium in Molecular and Cell Biology* (½-½-½)
fall, winter, spring MR. WOOLFOLK AND STAFF
Presentation of contemporary research problems in molecular and cell biology and related areas. Lecturers or invited speakers will introduce research and review topics.

Department of Organismic Biology

Organismic biology is concerned with the structure, function, and developmental biology of plants and animals and with such fields as symbiosis and pathobiology. Problems as diverse and as challenging as differentiation, transport mechanisms, hormonal integration, immune responses, and biological rhythms are at the cutting edge of the field. In attacking them, we must use principles of biology at all levels from molecular to population. The ultimate relevance of advances in biology at whatever level must rest on their capacity to illuminate the form and function of the individual organism.

200A-B-C *Research in Organismic Biology* (½-3 per quarter)
fall, winter, spring

01	*Plant Physiology*	MR. ARDITTI
02	*Developmental Biology*	MR. CAMPBELL
03	*Phycology*	MR. DIXON
04	*Ultrastructure — Plant and Cell Development*	MR. HEALEY
05	*Parasitology*	MR. KRASSNER
06	*Comparative Animal Physiology*	MR. STEPHENS
07	*Developmental Morphology of Higher Plants*	MR. BALL
08	*Pathobiology, Biology and Social Progress*	MR. STEINHAUS

Prerequisite: Graduate registration and consent of the instructor.

201A-B-C *Seminar in Organismic Biology* (1-1-1)
fall, winter, spring MR. STEPHENS AND STAFF
Advanced study in various fields of organismic biology.

Topics will vary from year to year. The 1967-68 program included seminars in comparative animal physiology, developmental biology, pathobiology, plant growth and development, theoretical biology, plant physiology, and cytology and ultrastructure.

202A-B-C *Analytical Techniques in Organismic Biology* (1-1-1) fall, winter, spring MR. KRASSNER AND STAFF

Advanced techniques employed in biological research will be studied from practical and theoretical points of view. These will include separation techniques, radioisotope, photomicrography and electron microscopy as well as others. Prerequisite: Consent of instructor.

203A-B-C *Graduate Tutorial in Organismic Biology* (1-1-1) fall, winter, spring

01	*Plant Physiology*	MR. ARDITTI
02	*Developmental Biology*	MR. CAMPBELL
03	*Phycology*	MR. DIXON
04	*Ultrastructure — Plant and Cell Development*	MR. HEALEY
05	*Parasitology*	MR. KRASSNER
06	*Comparative Animal Physiology*	MR. STEPHENS
07	*Developmental Morphology of Higher Plants*	MR. BALL
08	*Pathobiology, Biology and Social Progress*	MR. STEINHAUS

Intended for advanced study in areas not represented by formal courses. Tutorial may involve individual or small group study through discussion, reading and composition. Time and subject matter to be arranged individually. Prerequisite: Graduate standing.

232 *Comparative Morphogenesis of Vascular Plants* (1) fall MR. BALL

Lecture. Embryogenesis of vascular plants, including origins of tissue systems and meristems; structure and functions of meristems; comparative morphology and organography of shoot systems, including patterns of symmetry and phyllotaxis; shoot histogenesis; diversity of foliage leaves and patterns of histogenesis that are responsible for diversity in form; patterns of vascular differentiation in root and shoot; comparative organogenesis, and histogenesis in reproductive shoots. Prerequisite: Biology 132 or equivalent courses in elementary plant morphology or anatomy, or permission of instructor.

233 *Physiology of Symbiosis* (1)
spring of odd years MR. KRASSNER
Nutrition, physiology, and biochemistry of symbiotic relationships. Emphasis will be placed on protozoan and helminth parasites. Prerequisite: Biological Sciences 102, 106 and Organismic Biology 133 recommended.

234 *Interpretation of Ultrastructure* (1)
winter of even years MR. HEALEY
Lecture and laboratory. Lecture material will deal with the interpretation of ultrastructure of biological materials including morphology and ultracytochemistry. Laboratory will concentrate on techniques of electron microscopy. This course will be intended mainly for graduate students who plan to use ultrastructural information in their thesis research. Prerequisite: Organismic Biology 134, or equivalent course, and consent of instructor.

235 *Advanced Topics in Comparative Physiology* (1)
fall of even years MR. STEPHENS
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 equivalent or written consent of instructor.

236 *Advanced Topics in Developmental Biology* (1)
winter MR. CAMPBELL
Lecture, laboratory, demonstrations and discussions. Topics will vary from year to year. Subjects will center around the roles of cell behavior and structure in determining morphogenesis of vertebrate and invertebrate animals, and vascular and non-vascular plants. Prerequisite: Biological Sciences 103 and Organismic Biology 134 or their equivalents.

237 *Phycology* (1) spring MR. DIXON
Lecture and laboratory. A survey of the structure, reproduction and life histories of the algae, both freshwater and marine. Introduction to techniques involved in the culture and cytological investigation of algal material. Prerequisite: Biological Sciences 137, or equivalent, or consent of instructor.

290A-B-C *Colloquium in Organismic Biology*
fall, winter, spring MR. STEPHENS AND STAFF
Presentation of contemporary research problems in organismic biology and related areas. Lecturers or invited speakers will introduce research and review topics.

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, biogeography and paleoecology, taxonomy and systematics, analysis of plant and animal communities, problems of the effect of man on his environment, ichthyology 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.

Students interested in this department should consider taking course work in Mathematics (5A-B; 2A-B), Statistical Methods (Math 170A-B), and foreign language, and are encouraged to draw upon the many complementary courses offered by other departments of the School of Biological Sciences.

200A-B-C *Research in Population and Environmental Biology* (½-3 per quarter) fall, winter, spring

01	*Plant Symbiosis, Genetics, Biosystematics*	MR. ATSATT
02	*Ichthyology — Marine Ecology*	MR. BANE
03	*Ecology, Biogeography*	MR. BOUGHEY
04	*Quantitative Ecology, Numerical Taxonomy*	MR. GOODALL
05	*Computer Models and Genetics*	MR. JUSTICE
06	*Physiological Animal Ecology*	MR. MACMILLEN

Prerequisite: Qualified graduate students will be admitted with approval of the staff.

201A-B-C *Seminar in Population and Environmental Biology* (½-½-½) fall, winter, spring MR. ATSATT

Advanced study in areas of population and environmental biology. Topics will vary from year to year.

203A-B-C *Graduate Tutorial in Population and Environmental Biology* (1-1-1) fall, winter, spring

01	*Plant Symbiosis, Genetics, Biosystematics*	MR. ATSATT
02	*Ichthyology — Marine Ecology*	MR. BANE
03	*Ecology, Biogeography*	MR. BOUGHEY
04	*Quantitative Ecology — Numerical Taxonomy*	MR. GOODALL

05 *Computer Models and Genetics* MR. JUSTICE
06 *Physiological Animal Ecology* MR. MACMILLEN

Intended for advanced study in areas not represented by formal courses. Tutorial may involve individual or small group study through discussion, reading, and composition. Time and subject matter to be arranged individually. Prerequisite: Graduate standing.

210 *Fundamentals of Tropical Biology* (2) MR. BOUGHEY
spring, summer

Lectures and field work in San Jose and field stations in various regions of Costa Rica. Prerequisite: Registration for graduate work in School of Biological Sciences.

211 *Advanced Tropical Biology* (2) MR. BOUGHEY
spring, summer

Lectures and especially field work at the various Organization for Tropical Studies centers at Costa Rica; directed towards biozoological aspects. Prerequisite: Registration for graduate work in the School of Biological Sciences and some previous experience of tropical biology.

212 *Advanced Tropical Biology* (2) MR. BOUGHEY
spring, summer

Lectures and especially field work at the various Organization for Tropical Studies centers at Costa Rica; directed towards botanical aspects. Prerequisite: Registration for graduate work in the School of Biological Sciences and some previous experience of tropical biology.

290A-B-C *Colloquium in Population and Environmental Biology* (½-½-½) fall, winter, spring
MR. GOODALL AND STAFF

Invited speakers will introduce research and review topics within the area of population and environmental biology.

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 student interested in graduate training in psychobiology should prepare himself by

taking course work in biological sciences, in physical sciences, chemistry through organic chemistry, physics, and mathematics through calculus in particular; and in psychology, general experimental psychology, comparative and physiological psychology, sensation and perception and learning and memory in particular. Training in statistics and experimental design is highly recommended.

200A-B-C *Research in Psychobiology* (½-3 per quarter) fall, winter, spring

01	*Learning and Memory*	MR. MCGAUGH
02	*Hormones and Behavior*	MR. WHALEN
03	*Neurophysiology*	MR. VERZEANO
04	*Brain and Behavior*	MR. THOMPSON
05	*Neurochemistry*	MR. COTMAN
06	*Psychopharmacology*	MR. RUSSELL
07	*Arousal and Attention*	MR. WEINBERGER
08	*Neurochemical Bases of Behavior*	MR. WARBURTON

Prerequisite: Consent of instructor.

201A-B-C *Seminar in Psychobiology* (1-1-1) fall, winter, spring STAFF

Advanced study of current topics in various areas of psychobiology. Topics will vary from term to term and from year to year. May be repeated for credit. Prerequisite: Consent of instructor.

202A-B-C *Methods in Psychobiology* (1-1-1) fall, winter, spring STAFF

Lecture, discussion, and laboratory demonstration and participation course emphasizing classical as well as recent developments in phychobiological research methods and techniques. Prerequisite: Consent of instructor.

203 *Comparative Behavior* (1) fall MR. WHALEN

An analysis of the nature and bases of complex animal behavior with particular emphasis on the problem of "instinctive" behavior. Prerequisite: Consent of instructor.

204 *Learning and Memory* (1) winter MR. MCGAUGH

A consideration of the problems of learning and memory in animals in terms of current research and theory. The problem of the nature of mechanisms involved in memory storage is emphasized. Prerequisite: Consent of instructor.

205 *Attentive and Motivational Processes* (1) spring MR. WEINBERGER

An analysis of the structure and function of peripheral and

central nervous system processes underlying attention and motivation. Particular attention will be given to neurophysiological events involved in attention, arousal, and sleep. Prerequisite: Consent of instructor.

206A-B-C *Neurobiology* (1-1-1) MR. WEINBERGER, fall, winter, spring MR. THOMPSON, MR. COTMAN
Lecture and laboratory. An integrated three-quarter course in the basic structure and function of nervous systems viewed from both gross and micro levels, using morphological, physiological, and biochemical approaches. Prerequisite: Permission of instructor.

207A-B-C *Experimental Neurobiology* (1-1-1) MR. WEINBERGER, fall, winter, spring MR. THOMPSON, MR. COTMAN
Research theory, techniques, and their application in neurobiology. Prerequisite: Concurrent enrollment in 206.

241 *Advanced Neurophysiology* (1)
winter of odd years MR. VERZEANO
Psychobiology 241 and 242 comprise an integrated study of advanced neurophysiology, including conceptual, theoretical and applied aspects of nervous system function. Prerequisite: Mathematics 2C, Physics 3B, Chemistry 51C, Elementary Statistics, Elementary Electronics, Psychobiology 206A-B-C, 207A-B-C.

242 *Advanced Experimental Neurophysiology* (1)
winter of odd years MR. VERZEANO
Prerequisite: Concurrent enrollment in Psychobiology 241.
Graduate Seminars (offered in alternate years)

Graduate Seminars In:

260	*Learning and Memory* (1)	MR. MCGAUGH
261	*Homones and Behavior* (1)	MR. WHALEN
262	*Neural Networks* (1)	MR. VERZEANO
263	*Brain and Behavior* (1)	MR. THOMPSON
264	*Neurochemistry* (1)	MR. COTMAN
265	*Psychopharmacology* (1)	MR. RUSSELL
266	*Arousal and Attention* (1)	MR. WEINBERGER
267	*Neurochemical Bases of Behavior* (1)	MR. WARBURTON

Prerequisite: Consent of instructor.

290A-B-C *Colloquium in Psychobiology* (½-½-½)
fall, winter, spring STAFF
Presentation of contemporary research problems in psychobiology and related areas by invited speakers. Prerequisite: Graduate enrollment in the Department of Psychobiology.

THE SCHOOL OF FINE ARTS

CLAYTON GARRISON
Dean

The School of Fine Arts wishes to provide an education that develops critical and historical understanding as well as creative and performing artistry in each student. The objective of the program is to produce literate artists who are responsive to intellectual stimuli, capable of integrating knowledge into creative acts, and committed to rigorous standards of professional involvement. Offerings in all areas of the fine arts include a comprehensive study of literature, history, theory, and criticism — resources that are not only substantive materials in themselves, but essential research sources for the creative act. Theoretical, literary, and historical courses complement the practical work in studio workshops and performance.

All courses in all areas of the arts at the freshman-sophomore level, and certain junior-senior courses, will not only provide the broad and fundamental experiences essential for majors but also invite the intellectual and creative participation of the non-specialist as a part of a liberal education. Although public performance and exhibits will seek to attain a professional level, all departments will provide workshop and studio experiences for the nonmajor.

The School of Fine Arts is comprised of the Departments of Art, Drama, Music, and Dance, with the Dean of the School and the departmental chairmen administering the academic activities of the four departments.

The Departments of Art, Drama, Music, and Dance offer four-year curricula leading to the Bachelor of Arts degree. All of the Departments are planning to initiate two-year programs leading to the Master of Fine Arts degree. The School of Fine Arts and the Department of English offer an interdisciplinary program in playwriting leading to the M.F.A. Introductory courses in architecture and film are also available in the School of Fine Arts.

The curricula in the fine arts are organized to achieve a balance between (1) professional competence, and (2) a liberal education which can contribute substantially to the perception of the artist and the significance of what he has to say in his particular medium.

Departmental majors are offered in Art, Drama, Music, and

Dance. In addition to the Departmental majors, an interdisciplinary major involving studies in two of the four fine arts offerings is available. Departmental requirements include (1) extensive studio and workshop experiences, (2) essential theoretical and historical backgrounds, (3) exercises in criticism, and (4) tutorials aimed at independent and creative performance. 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.

TEACHING CREDENTIALS: Upon completion of a five-year program which includes the divisional and departmental requirements for the Bachelor's degree plus additional requirements established by the California State Board of Education, fine arts majors may qualify for teaching credentials at the elementary, secondary, and junior college levels.

THE UNIVERSITY'S CULTURAL PROGRAMS: 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 annual All-University Student Art Festival provides an opportunity for students and faculties in the arts on the various University campuses to meet one another, to exchange ideas and to share the results of their creative efforts, to participate in workshops, and to talk with eminent professional people in the creative arts.

Art

The program in art provides basic studio experiences in the fundamental knowledge and techniques of painting, sculpture, design, 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 constantly aims to develop a sense of visual awareness by as wide a range of the study of art as possible. Each student will be able to discover an area and style particularly suited to his own talents and interests. 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 art major 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 pre-learned techniques or a rigid intellectual pattern.

Nonmajors are welcome to participate in all aspects of the program, providing prerequisites are met. Courses without prerequisites particularly suited for the nonmajor include the basic studio course, *Visual Arts;* the elementary studio courses in life drawing, painting, sculpture, and graphic arts; the introductory course in principles of art and art criticism, *The Nature of Art: Structure and Style;* and all courses in the history of art.

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 serve not only as a physiological center for the logical training of the body, but also as a basic language of movement for the choreographer. Workshop experiences build progressively on the basic techniques of ballet and extend through the contemporary idioms of jazz, modern, and free-style. The aim is to develop kinetic resources, precision, flexibility, and freedom in an eloquently coordinated and intelligently responsive body.

Nonmajors are welcome to participate in all aspects of the program, providing prerequisites are met. Courses without prerequisites particularly suited for the nonmajor include the basic workshops in ballet, free-style and jazz, and the course in the history of dance.

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.

Nonmajors are welcome to participate in all aspects of the program providing prerequisites are met. Courses without prerequisites particularly suited for the nonmajor include the elementary studio course, *Acting;* the introductory course in criticism,

The Nature of Drama: Structure and Style; and all courses in dramatic literature and history of theatre. Participation in all aspects of the production of plays, musicals, operettas, and operas is open to all qualified students.

Music

The program for the A.B. 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 his 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.

Nonmajors are welcome to participate in all aspects of the program, providing prerequisites are met. Qualified students are invited to participate in the chorus, orchestra, and chamber groups.

Courses of Study

Art

ROBERT IRWIN, *Lecturer in Art*
CRAIG KAUFFMAN, *Lecturer in Art*
TONY DE LAP, *Assistant Professor of Art*
JOHN MASON, *Associate Professor of Art*
PHILIP MCALEER, *Assistant Professor of Art*

DAVID METZGAR, *Assistant Professor of Art*
ALAN SOLOMON, *Visiting Professor of Art*

FRESHMAN-SOPHOMORE COURSES

20 *The Nature of Art: Structure and Style* (1)
30A-30B-30C *Visual Arts Fundamentals* (1-1-1)
30A Fundamentals of drawing and pictorial structure.
30B Theory of color and two-dimensional design.
30C Three-dimensional design.
40A-40B-40C *History and Theory of Art* (1-1-1)
45 *Problems in Design* (1) may be repeated for credit.
50A-50B-50C *Drawing* (1-1-1)
60A-60B-60C *Painting* (1-1-1)
70A-70B-70C *Sculpture* (1-1-1)
80A-80B-80C *Graphic Arts* (1-1-1)
Introduction to lithography.
86A-86B-86C *Ceramics* (1-1-1)

JUNIOR-SENIOR COURSES

Courses in the following 100 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)

Courses in the following 100N sequence are primarily for nonmajors in Art. There are no prerequisites.

100N *Art of the Ancient World* (1)

103N *Art of the Medieval World* (1)
104N *Leonardo and the Italian Renaissance* (1)
105N *Durer and the Northern Renaissance* (1)
106N *Rembrandt and the Baroque* (1)
108N *Impressionism and 19th-Century Art* (1)
109N *Picasso and 20th-Century Art* (1)
110N *Frank Lloyd Wright and 20th Century Architecture* (1)
112N *Oriental Art* (1)
127 *History of Design* (1)
128 *Art and Technology* (1)
129 *The New American Painting* (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)
150 *Advanced Problems in Life Drawing* (1)
160 *Advanced Problems in Painting* (1)
170 *Advanced Problems in Sculpture* (1)
180 *Advanced Problems in Graphic Arts* (1)
185 *Design and Typography* (1)
186 *Advanced Problems in Ceramics* (1)
190 *Studio Tutorial in Design* (1)
191 *Studio Tutorial in Life Drawing* (1)
192 *Studio Tutorial in Painting* (1)
193 *Studio Tutorial in Sculpture* (1)
194 *Studio Tutorial in Graphic Arts* (1)
195 *Art Museum Problems* (1)
196 *Tutorial in Art History* (1)
197 *Tutorial in Criticism of Art* (1)
198 *Studio Tutorial in Ceramics* (1)
199 *Special Studies in the History and Criticism of Art* (1)

Dance

EUGENE LORING, *Senior Lecturer in Dance and Chairman of Dance*
EL GABRIEL, *Assistant Professor of Dance*
JAMES PENROD, *Assistant Professor of Dance*

FRESHMAN-SOPHOMORE COURSES

20A-20B-20C *Theories of Dance* (1-1-1)
Open only to students enrolled in workshop courses.

30A-30B-30C *Studio Workshop in Ballet I* (½-½-½)
35A-35B-35C *Studio Workshop in Ballet II* (½-½-½)
Prerequisite: *Ballet I*
40A-40B-40C *Studio Workshop in Free-Style I* (½-½-½)
45A-45B-45C *Studio Workshop in Free-Style II* (½-½-½)
Prerequisite: *Free-Style I*
50A-50B-50C *Studio Workshop in Jazz I* (½-½-½)
Prerequisite: one quarter of *Free-Style I*
55A-55B-55C *Studio Workshop in Jazz II* (½-½-½)
Prerequisite: *Jazz I*
60 *Dance Performance* (1)
May be repeated for credit.
65A-65B-65C *Dance Notation* (1-1-1)

JUNIOR-SENIOR COURSES

110A-110B-110C *History of Dance* (1-1-1)
120A-120B-120C *Music for Dancers* (1-1-1)
125 *Criticism of Dance* (1)
130A-130B-130C *Advanced Studio Workshop in Ballet III* (½-½-½) Prerequisite: *Ballet II*
135A-135B-135C *Advanced Studio Workshop in Ballet IV* (½-½-½) Prerequisite: *Ballet III*
140 *Advanced Studio Workshop in Free-Style* (½)
May be repeated for credit.
Prerequisite: *Free-Style II.*
150 *Advanced Studio Workshop in Jazz* (½)
May be repeated for credit. Prerequisite: *Jazz II.*
155A-155B-155C *Choreography I* (1-1-1)
160 *Advanced Dance Performance* (1)
May be repeated for credit.
170 *Ethnic Dance of Eastern Cultures* (1)
175 *Ethnic Dance of Western Cultures* (1)
180A-180B-180C *Choreography II* (1-1-1)
185A-185B-185C *Choreography III* (1-1-1)
190 *Studio Tutorial in Ballet* (½)
May be repeated for credit. Prerequisite: *Ballet III.*
191 *Studio Tutorial in Free-Style* (½)
May be repeated for credit. Prerequisite: *Advanced Studio Workshop in Free-Style.*
192 *Studio Tutorial in Jazz* (½)
May be repeated for credit. Prerequisite: *Advanced Studio Workshop in Jazz.*

193 *Studio Tutorial in Choreography* (1)
May be repeated for credit.
Prerequisite: *Choreography III.*
194 *Tutorial in History of Dance* (1)
May be repeated for credit.
Prerequisite: 110ABC, 120ABC, 180ABC.
195 *Tutorial in Dance Notation* (1)
May be repeated for credit.

Drama

IAN BERNARD, *Lecturer in Drama*
ROBERT S. COHEN, *Assistant Professor of Drama*
CLAYTON GARRISON, *Professor of Drama and Dean of Fine Arts*
JOHN ELLIOTT, *Production Manager*
HERBERT MACHIZ, *Lecturer in Drama*
DANIEL STEIN, *Assistant Professor of Drama*
F. COWLES STRICKLAND, *Visiting Professor of Drama*
RICHARD TRIPLETT, *Assistant Professor of Drama*

FRESHMAN-SOPHOMORE COURSES

20 *The Nature of Drama: Structure and Style* (1)
Same as *English* 20.
22 *Shakespeare* (1) Same as *English* 22.
25 *Principles of Speech* (1)
30A-30B-30C *Acting* (1-1-1)
30A Analysis of script and performance of scenes.
30B Characterization.
30C Styles of Acting.
32 *The Art of Writing: Drama* (1)
Same as *English Wr* 32
40A-40B-40C *Development of Drama* (1) Same as *English* 40
40A Greek Drama through Shakespeare.
40B Restoration Drama through Ibsen.
40C Contemporary Drama.
60 *University Theatre* (1)
May be repeated for credit.

JUNIOR-SENIOR COURSES

100A-100B-100C *Design for Theatre* (1-1-1)
100A Costume Design.
100B Scene Design.
100C Lighting Design.

105A-105B-105C *Technical Production* (1-1-1)
105A Costume.
105B Scenery.
105C Lighting.
112 *Playwriting* (1) Same as *English Wr* 112
114 *Film Writing* (1)
May be repeated for credit.
120A-120B *History of Design in Theatre* (1-1)
130 *Advanced Acting* (1)
May be repeated for credit.
132 *Voice and Speech in the Theatre* (1)
140 *Contemporary American Drama* (1)
141 *Contemporary British Drama* (1)
142 *Contemporary Continental Drama: Theatre of the Absurd* (1)
143 *Greek Drama* (1)
144 *Medieval and Tudor Drama* (1)
Same as *English* 144.
145 *Elizabethan and Jacobean Drama* (1)
Same as *English* 145.
146 *Shakespeare* (1) Same as *English* 146.
147 *Restoration and Eighteenth-Century Drama* (1)
Same as *English* 147.
148 *Modern British Drama:* 1870-1940 (1)
Same as *English* 148.
149 *Modern American Drama:* 1870-1940 (1)
Same as *English* 149.
150 *Realism and Revolt: Ibsen to O'Neill* (1)
151 *Advanced Scene Design* (1)
May be repeated for credit.
152 *Advanced Lighting Design* (1)
May be repeated for credit.
154 *Costuming for the Theatre* (1)
May be repeated for credit.
155 *Advanced Costume Design for Theatre* (1)
May be repeated for credit.
160 *Advanced University Theatre* (1)
May be repeated for credit.
165 *Music Theatre Workshop* (½)
May be repeated for credit.
166 *History of Operetta and Musical Theatre* (1)

170 *Directing* (1)
May be repeated for credit.
175 *Staging Shakespeare* (1)
180 *Dramatic Criticism* (1)
182 *History of Dramatic Criticism* (1)
185 *Advanced Directing* (1) May be repeated for credit.

The following tutorials may be repeated for credit:

190 *Studio Tutorial in Acting* (1)
191 *Studio Tutorial in Directing* (1)
192 *Studio Tutorial in Scene Design* (1)
193 *Studio Tutorial in Costume Design for Theatre* (1)
194 *Tutorial in Criticism* (1)
195 *Studio Tutorial in Production* (1)
196 *Repertory Theatre* (1) May be repeated for credit.
197 *Tutorial in Dramatic Literature* (1)
May be repeated for credit.
198 *Experimental Theatre* (1)
May be repeated for credit.

Music

COLIN SLIM, *Associate Professor of Music and Chairman of Music*

MAURICE ALLARD, *Assistant Professor of Music and Conductor of the University Chorus*

CAROL BOELTER, *Lecturer in Music*

WILLIAM HOLMES, *Associate Professor of Music*

ARNOLD JUDA, *Lecturer in Music*

PETER ODEGARD, *Associate Professor of Music and Conductor of the University Orchestra*

THOMAS WHITNEY, *Acting Instructor of Music*

A professional tutorial staff in vocal and instrumental music supplements the staff.

FRESHMAN-SOPHOMORE COURSES

5A-5B-5C *Musicianship I* (½-½-½)
10 *Basic Piano* (½)
For music majors only.
May be repeated for credit.
15A-15B-15C *Musicianship II* (½-½-½)
20 *The Nature of Music: Structure and Style* (1)

30A-30B-30C *Theory I* (1-1-1)
40A-40B-40C *History and Literature of Music* (1-1-1)
50A-50B-50C *Composition* (1-1-1)

All courses in the 60 sequence may be repeated for credit.

60 *University Orchestra* (½)
61 *Chamber Ensemble* (½)
62 *University Chorus* (½)
63 *Vocal Music for Small Chorus* (½) By audition only: *Music* 62 must be taken concurrently.
64 *Opera Workshop* (½)
65 *Literature for Keyboard* (½)
66 *Literature for String Instruments* (½)
67 *Literature for Wind Instruments* (½)
68 *Vocal Literature* (½)

JUNIOR-SENIOR COURSES

130A-130B-130C *Theory II* (1-1-1)
135A-135B-135C *Counterpoint* (1-1-1)
138A-138B-138C *Fugue* (1-1-1)

Courses in the following 140 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)

Courses in the following 140N sequence are for nonmajors in music. Prerequisite for each of the courses is *Music* 20.

140N *Music of the Middle Ages* (1)
141N *Music of the Renaissance* (1)
142N *Music of the Baroque Period* (1)
143N *Music of the Classical Period* (1)
144N *Music of the Romantic Period* (1)

145N *Music of the 20th Century* (1)
150 *Advanced Composition* (1)
May be repeated for credit.
152A-152B-152C *History of Opera* (1-1-1)
155A-155B-155C *Form and Analysis* (1-1-1)

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

160 *Advanced University Orchestra* (½)
161 *Advanced Chamber Ensemble* (½)
162 *Advanced University Chorus* (½)
163 *Advanced Vocal Music for Small Chorus* (½)
By audition only.
Music 162 must be taken concurrently.
164 *Advanced Opera Workshop* (½)
165 *Advanced Literature for Keyboard* (½)
166 *Advanced Literature for String Instruments* (½)
167 *Advanced Literature for Wind Instruments* (½)
168 *Advanced Vocal Literature* (½)
169 *Conducting* (1)
170 *Orchestration* (1)
180 *Music Criticism* (1)
190 *Studio Tutorials in Music* (½)
(piano, strings, winds, voice, conducting)

Fine Arts

(Interdisciplinary Courses)

Art 20 *The Nature of Art: Structure and Style* (1)
Dance 20 *Theories of Dance* (1)
Drama 20 *The Nature of Drama: Structure and Style* (1)
Music 20 *The Nature of Music: Structure and Style* (1)
Fine Arts 30 *The Nature of Film* (1)
Fine Arts 40 *The Nature of Architecture: Problems, Structure and Style* (1)
Fine Arts 100 *The Film as Art* (1)
Fine Arts 120 *Studies in the Theory and Practice of the Arts* (1)
May be repeated for credit.
Fine Arts 199 *Seminar in Interdisciplinary Studies in Fine Arts* (1)
May be repeated for credit.

UC IRVINE - 1968-1969

THE SCHOOL OF HUMANITIES

SAMUEL C. MCCULLOCH
Dean

The humanities are concerned with fundamental problems of human thought and experience. They contribute both to understanding and to continued appraisal of the human condition. They introduce the student to those many broad and difficult problems of value not susceptible to statistical or quantitative judgment; therefore, humanistic study is of importance to students in all areas of specialization. The humanities provide a useful foundation for those who plan to work toward advanced degrees in medicine, business, law, journalism, and other professional disciplines. It is not always understood that many such professional schools encourage undergraduates to major in the humanities and, at the very least, to study extensively in the humanistic disciplines.

The School is composed of the Departments of Classics, English and Comparative Literature, Foreign Languages and Literatures, History, and Philosophy, and offers baccalaureate work in Classics, comparative literature, English, history, philosophy, and in foreign languages and their literatures, including classics. The School encourages joint majors, majors with supporting work in related disciplines, and, wherever practicable, interdisciplinary programs and comparative studies. For students in other schools on all levels, it offers a wide range of electives which are available without prerequisite. It is concerned as well with offering opportunity to improve the basic humanistic skills of writing, reading, and, of course, thinking.

Each Department provides the means by which outstanding undergraduate majors are offered unusual opportunities for advanced study and research. Each Department already has, or plans, work leading to the Master of Arts and Doctor of Philosophy degrees. The Department of English and Comparative Literature offers, as well, the Master of Fine Arts in Writing.

PRE-LAW STUDENTS

Students interested in entering law school upon completion of their baccalaureate can major in any of the humanities. Specific requirements imposed by specific law schools can be met by choosing the necessary electives.

American Studies

The School of Humanities sponsors an honors program in American Studies which focuses on a whole culture rather than a particular mode of study. It is thus interdisciplinary, drawing upon courses with an American emphasis offered by the Schools of Humanities, Fine Arts and Social Sciences. To give the program solidity and a distinctive cohesion the major proceeds through two phases. First the student gains rigorous grounding in the several disciplines from which American Studies draws. Then, in consultation with his advisor, he selects an area of specialization from one of the several fields studied in the first phase. Having examined the several sides of American culture the student then selects one avenue leading toward its center and travels along it as far as he can. A senior thesis, under the direction of his special field advisor, completes the second phase of the major.

Linguistics

An interschool program in Linguistics is now being prepared. Courses in Introduction to Linguistics, Historical Linguistics and Phonology-Morphology have already been given. These plus other courses such as Syntactic analysis, Field Methods in Linguistics, and Computational Linguistics will form the basis of an undergraduate program available to students in Humanities, Social Sciences, and Computer Sciences. Humanities students will complete their major with appropriate courses in foreign languages, English, and philosophy.

DEPARTMENT OF CLASSICS

The student planning to major in Greek, Latin, or Classics should obtain a copy of the Classics Handbook from the departmental office.

Undergraduate Programs

The Department of Classics aims to provide for the undergraduate student an exposure to the origins and heritage of western civilization. The department is committed to a twofold purpose:

1. To transmit the culture, ideals, and attitudes of Classical civilization through the Greek and Roman languages and literatures, and,

2. To awaken in the non-Classics major a cognizance of the values and influences of Greece and Rome on our own civilization through courses in Classical literature in translation, mythology and religion.

For the 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 primarily to the theories and techniques of literary criticism. In addition, he will obtain a rich background in such ancillary disciplines as ancient history, archaeology, Classical art, drama, philosophy, and religion.

The Department of Classics provides the undergraduate student with a choice of three separate majors: Greek, Latin, and Classics (the latter a combined Greek and Latin major). Students are encouraged to consult with the Classics Staff regarding the appropriate choice of major and design of program.

Classics

THEODORE F. BRUNNER, *Assistant Professor of Classics*
LUCI BERKOWITZ, *Assistant Professor of Classics*
PETER COLACLIDES, *Professor of Classics*
SYDNEY B. COOK, *Lecturer in Classics*
RICHARD I. FRANK, *Assistant Professor of Classics and Ancient History*
IRENE P. WARBURTON, *Assistant Professor of Classics*

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.

Undergraduate Courses

Greek 1A-1B-1C *Fundamentals of Greek* (1-1-1)
The elements of Classical Greek Grammar and syntax, with selected readings. 1C is devoted to readings from Plato's *Apology*. (No prerequisites.)

Greek 2A-2B-2C *Intermediate Greek* (1-1-1)
Readings from Greek authors. 2A: Herodotus; 2B: Homer; 2C: Sophocles. (Prerequisite: Greek 1C or equivalent.)

Greek 10 *Greek Prose Composition* (1)
Offered in Fall Quarter only. (Prerequisite: Greek 1C or equivalent.)

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

Latin 1A-1B-1C *Fundamentals of Latin* (1-1-1)
The elements of Latin grammar and syntax, with selected readings. 1C is devoted to selected readings from Catullus. (No prerequisites.)

Latin 2A-2B-2C *Intermediate Latin* (1-1-1)
Readings from Roman authors. 2A: Ovid; 2B: Livy; 2C: Horace. (Prerequisite: Latin 1C or equivalent.)

Latin 10 *Latin Prose Composition* (1)
Offered in Winter Quarter only. (Prerequisite: Latin 2A or equivalent.)

Latin 101A-101B-101C *Advanced Latin* (1-1-1)

Latin 101 Level courses deal with literary genres such as Roman Comedy, Tragedy, Lyric Poetry, etc. For information regarding the genres offered in 1968-69, consult with the Departmental office. (Prerequisite: Latin 2C or equivalent.)

Latin 102A-102B-102C *Survey of Roman Literature* (1-1-1)
A chronological survey of Roman Literature based on Latin readings from all major Roman authors. (Prerequisite: Latin 101C or equivalent.)

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

Classics 141 *Classical Historians and Historiography* (1)
The development of historiography from its ethnographic and epic origins to its form as a major

literary genre. All readings are in English. (No prerequisites.)

Classics 151 *Greek Literature in Translation* (1)
Offered in Fall Quarter only. A survey of Classical Greek Literature based on readings in English translation. (No prerequisites.)

Classics 152 *Latin Literature in Translation* (1)
Offered in Winter Quarter only. A survey of Roman Literature based on readings in English Translation. (No prerequisites.)

Classics 153 *Classical Mythology and Religion* (1)
Spring Quarter only. Study of the Greek and Roman divinities and religions in light of their impact on the pre-Christian and Christian world. (No prerequisites.)

DEPARTMENT OF ENGLISH AND COMPARATIVE LITERATURE

The student intending to major in English or Comparative Literature should obtain a copy of *Undergraduate Study in English and Comparative Literature* from the Departmental office. The student intending to major in Comparative Literature should also obtain the Comparative Literature booklet from the Director of Comparative Literature.

Undergraduate Programs

The Department of English and Comparative Literature addresses itself to the fundamental humanistic problem of value. The problem of value follows upon speculation about the nature of things. Thus the Department's fundamental literary concern is critical and theoretical. To accomplish its aims it must be neither tied to a single theoretical position nor victimized by rambling diversity. The best literary minds are 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. 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.

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 program is based on the assumption that important literary problems transcend national and linguistic boundaries and that texts of the literature of other languages are often as much a part of the educated American's literary background as those of his own. The aim of the program is therefore to present the student's literary heritage to him in its proper proportions, freed from the limitations of the conventional departmentalization of American universities. The listed courses in literary genres and literary history and relations are designed so that the concepts involved are transferable to other material. Thus a specialized course in a single genre will involve the general theory of all literary genres, and a course in a specific literary movement will aid in understanding the general process through which literary movements form and develop. For this reason it is not expected that even an advanced student will need to complete all of these courses, and much of his specific knowledge of world literature will be gained through independent reading or through course work in English, Classical and Modern Languages, or other fields.

Since the Department's three areas of emphasis are not necessarily discrete entities, the student is invited to take work in all three, with an emphasis on one of the first two or a major in the third. A student of literature should recognize the importance of understanding literary problems of a theoretical nature, of developing a broad literary experience which transcends national bound-

aries, and of experiencing the problems of literary creation at first hand. The student should form a coherent program of courses with the help of his advisor, including experience in independent study courses, undergraduate seminars, the workshop in writing (for students electing a writing emphasis), and the comprehensive examination. The Department offers the student an opportunity to be exposed to particular points of view and to explore important problems, rather than simply to pass through a series of prescribed courses. By not stipulating a variety of prerequisites the Department invites students from all schools of the University to take advantage of its offerings, for it assumes that the experience of literature, an understanding of the verbal culture and how it was developed, and the achievement of a high level of literacy are fundamental to a liberal education.

Many of the courses offered, particularly those devoted to the historical periods of literature, may vary in specific content from year to year depending upon the plans of individual teachers. It is a principle of departmental offerings in literary periods that since no course can possibly treat all of the major authors or important works of a given age, each teacher is charged with organizing classes and readings which provide basic understandings and point in proper directions.

Graduate Programs

All those interested in graduate study in the Department should obtain the brochure on graduate programs from the Departmental office.

The Department assumes that there must be a vital intellectual relationship between professor and candidate; specific requirements for graduate degrees will be reached by consultation among members of the faculty and the candidate himself. The candidate for the Master of Arts or the Master of Fine Arts in Writing plans a program with his advisor; the candidate for the Ph.D. with his advisor and a two-man committee. Candidates for literary degrees are encouraged to study philosophy, history, foreign languages and literatures, and the fine arts.

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.

Candidates for all graduate degrees must meet requirements set down by the University of California. Applicants for the M.A. and Ph.D. in English must submit scores for the Graduate Record Examination (GRE) and the Advanced Test, Literature (ATL).

The Department is eager to encourage serious study and to establish a community of scholars. To these ends part-time graduate work is discouraged; only in exceptional circumstances will students be permitted to undertake programs of less than six full courses during the academic year. The normal expectation, however, is an enrollment in three courses each quarter. A full course load for teaching assistants is six quarter courses during the academic year.

The Department is entering into cooperation with the Department of Literature at the University of California, San Diego, which will enable graduate students at one campus to enroll in seminars at the other. In addition, there will be occasions on which professors will travel between campuses to offer instruction.

GRADUATE DEGREES IN ENGLISH

The Master of Arts In English

Each candidate for the M.A. will be assigned to a graduate advisor, who will supervise his program of work. The M.A. may be attained by either of two methods: the student may elect to present a written essay (Plan I) in lieu of a written examination; he shall then be required to defend the essay in an oral examination. The normal plan of study, however, which is Plan II, includes 1) the completion of course work, as advised, for three quarters or the equivalent; 2) the passing of a written examination upon a designated reading list; 3) demonstrated proficiency in reading a designated foreign language. All M. A. students shall 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.

The Master of Fine Arts In English

The Master of Fine Arts (M.F.A.) in English is an interdisciplinary degree awarded for creative writing in poetry, short story, drama, or the novel. The M.F.A. programs are based on the assumptions that artistic creation of high quality is disciplinary in nature, and that the University has a continuing obligation to the emerging, new artist.

The M.F.A. is normally conferred at the completion of a two-

year program. The candidate presents an integrated course of study which brings together three kinds of experience: courses at the graduate level in literary studies, the focus being on contemporary literature and theory, hopefully in the genre of the candidate's thesis; courses in at least one other field of art, such as music, art, art history, drama, aesthetics, with the possibility of studio courses in these fields; completion of a book-length piece of creative writing, in one genre, of publishable quality.

Having reached a higher degree of artistic and intellectual maturity, the candidate completes his work by the presentation of his thesis and is examined on a reading list of literary works which will illuminate the history of and the theory of the genre of the candidate's thesis. If, for example, the candidate's thesis is a novel, the examination is on a reading list of novels, each list newly conceived in the light of the candidate's past experience and present needs. There is no examination on the thesis; the candidate has examined himself each time he has sat down to write.

The Doctor of Philosophy In English

The program for the Ph.D. in English normally includes about eighteen courses of work beyond the B.A., two of which will normally be in the graduate teaching program; proficiency in the reading of two acceptable foreign languages, or demonstration of more than ordinary ability to read and to speak a single acceptable foreign language; the dissertation; and satisfactory performance on designated examinations.

The languages acceptable depend upon the nature of the student's program as determined by his advisors. Reading competence in one of these languages must be established in the first quarter of residence. Competence in the other language must be established well before the general examinations. Satisfactory work in courses in which literary translation is actually practiced must fulfill at least one of the language requirements. The necessity of competence in languages such as Old English is determined by the advisory committee in the light of the student's total program. All candidates for the Ph.D. will be required to know fundamental facts about the history of the English language and basic linguistic theory.

Upon completion of course work the student normally presents himself for general examinations on literary theory and criticism; on some particular literary form, genre, style, theme, or structure; a historical period; a group of authors; and a specific methodological approach to literature. The first four of these

examinations are written, the fifth oral. The student has the opportunity to present his own choices for examination, but the choices must enable him to demonstrate breadth of knowledge and literary understanding, and therefore must be approved by his advisory committee. Certain alternatives to this series of examinations may be allowed in special cases.

As soon after completion of the general examination as is practicable, the student presents an essay to his advisory committee and is orally examined upon it and related subjects. Out of this essay should grow the dissertation. At this point the student is admitted to candidacy for the degree. Submission and acceptance of the dissertation complete the work for the Ph.D. All work for the Ph.D. degree must be in courses, seminars, or conferences limited to graduate students.

GRADUATE DEGREES IN COMPARATIVE LITERATURE

There are at least four avenues by which the UCI student may approach graduate work in Comparative Literature; students with bachelor's degrees from other institutions should have equivalent training:

(a) The undergraduate major in Comparative Literature described above.
(b) A normal English major in criticism, provided a sufficient background in at least one foreign language is gained. A beginning on a second foreign language is highly recommended.
(c) A normal major in drama, with same provisos as (b).
(d) A normal major in a foreign language, provided a sufficient general background in world literature is gained.

Make-up work will be required before graduate studies can begin if one of these avenues has not been taken.

The Master of Arts In Comparative Literature

The student proposing himself for the degree of Master of Arts should complete course work for the equivalent of three quarters. This course work should include CL 220 *(Problems in Translation)* with project in either French or German and appropriate graduate-level work in English, foreign languages, drama, comparative literature, and other areas as counseled by the advisor. The student is offered the option, as in the M.A. in English, of Plans I and II, but Plan II is recommended. 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.

The Doctor of Philosophy In Comparative Literature

Details of the planned doctoral program in Comparative Literature may be obtained from the Director. In general, an exceptional command of foreign languages is required, including at least one language and literature mastered in all of its chief literary periods from its historical origins to the present, and a second language and literature mastered in a single period. Further language study may be required depending upon the student's specialization. The requirements for the doctorate also include an area of competence in literary theory and practical criticism.

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. The program is particularly receptive to efforts to bring to bear the discipline and method of modern literary criticism, as distinguished from conventional research scholarship, on problems of comparative and general literature. Studies of the relation between literature and the other arts are also particularly encouraged.

English and Comparative Literature

HAZARD ADAMS, *Professor of English and Chairman of the Department*
NOELINE ALCORN, *Associate and Co-Director of Subject A*
HOWARD S. BABB, *Professor of English*
JOSEPH N. BELL, *Lecturer in English*
DONALD BRANNAN, *Acting Assistant Professor of English*
JAMES L. CALDERWOOD, *Associate Professor of English and Vice-Chairman of the Department*
PETE E. CLECAK, *Assistant Professor of English*
SUSAN COHEN, *Associate and Co-Director of Subject A*
PAUL FRIZLER, *Assistant Professor of English*
HARVEY GROSS, *Professor of English*
JAMES B. HALL, *Professor of English and Director of the Writing Center*
OAKLEY HALL, *Visiting Professor of English* (on leave Winter Quarter)

DONALD HEINEY, *Professor of Comparative Literature and Director of the Program in Comparative Literature*
RENEE RIESE HUBERT, *Professor of Comparative Literature and French*
MARY KEY, *Assistant Professor of English*
GALWAY KINNELL, *Visiting Lecturer in Poetry*
MURRAY KRIEGER, *Professor of English*
FRANK LENTRICCHIA, *Assistant Professor of English*
JAY MARTIN, *Professor of English and American Studies*
JAMES MCMICHAEL, *Assistant Professor of English*
ROBERT L. MONTGOMERY, *Professor of English*
ROBERT L. PETERS, *Professor of English*
EDGAR T. SCHELL, *Assistant Professor of English*
STEPHEN SHAPIRO, *Assistant Professor of English*
HAROLD TOLIVER, *Associate Professor of English*
ALBERT O. WLECKE, *Assistant Professor of English*
CHARLES P. WRIGHT, JR., *Assistant Professor of English*
MAX WEI YEH, *Assistant Professor of English*

English and Comparative Literature Courses

Subject A: Subject A, a remedial course taken for no credit in the fundamentals of writing, is required of all students who, upon entrance, do not satisfy the Subject A requirement by examination. The course includes the writing of papers in addition to drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Satisfaction of the Subject A requirement is prerequisite to graduation and to all courses in English. The fee for taking the course is $45.00. For a description of the Subject A requirements, refer to page 000.

Undergraduate Courses

E 5 *Thought and Process in Writing*
An introduction to the thought processes basic to all writing, the course rejects the traditional distinction between creative and expository writing and assumes that the imagination, as well as the logical powers must be employed for the production of the successful essay. Students enrolling in *English* 5 are expected to continue into *English* 10.

E 10 *The Language of Argument* (1)
The art of writing the persuasive essay, with emphasis on logic and rhetoric. Prerequisite: *English* 5.

E 15 *Approaches to Literary Language* (1)
The writing of essays with respect to readings in modern literature and thought. Prerequisite: *English* 10.

E 20 *The Nature of Drama: Structure and Style* (1)
(Same as *Drama* 20.)

E 22 *Shakespeare* (1)
An introduction to Shakespeare's plays.
(Same as *Drama* 22.)

E 23 *The Nature of Poetry* (1)
The reading of poetry with special attention to its variety, its conventions, and forms.

E 24 *The Nature of Fiction* (1)
The reading of prose fiction with special emphasis upon awareness of literary techniques.

E 26 *Literature and Society* (1)
An analysis of the social basis of popular and serious contemporary American literature.

WR 30 *The Art of Writing: Poetry* (1)
Practice in the writing of poems, evaluations of student manuscripts, and parallel readings.

WR 31 *The Art of Writing: Prose Fiction* (1)
Practice in the writing of prose fiction, evaluation of student manuscripts, and parallel readings.

WR 32 *The Art of Writing: Drama* (1)
Practice in the writing of drama, evaluation of student manuscripts, and parallel readings.

WR 38 *The Art of Writing: Non-Fiction and Journalism* (1)
Practice in the writing of non-fiction and news articles, evaluation of student manuscripts, projects.

WR 39 *Advanced Expository Writing* (1)
Work toward developing further the ability to write clear and effective prose. Prerequisite: *English* 10 or consent of instructor.

CL 40A-B-C *Development of Drama* (1-1-1)
(Same as *Drama* 40A-B-C.)

CL 50A-B-C *The Literary Tradition* (1-1-1)
The reading of selected major works in the western literary tradition.

CL 100A *Undergraduate Seminar in Literary Theory and Practice* (1)
Open to upper-division majors in English and Comparative Literature only. Sections limited to fifteen students. Spring or early fall enrollment with the course director is necessary to reserve space for specific sections. Each instructor announces a topic that joins theoretical speculation about literature and the practical criticism of individual literary texts. Topics are announced during the spring quarter preceding the year in which the course is given.

CL 100B *Undergraduate Seminar in Literary History* (1)
Open to upper-division majors in English and Comparative Literature only. Sections limited to fifteen students. Spring or early fall enrollment with the course director is necessary to reserve space for specific sections. Each instructor announces a period of literary history or a major author to which the course will be devoted.

L 100 *Introduction to Linguistics* (1)
(Same as *Linguistics* 100.)

CL 101 *Lectures in Literary Theory and Criticism* (1)
Required of junior majors in English and Comparative Literature, but open to non-majors as well. A comprehensive series of lectures and discussions devoted to the theoretical dimensions of literary criticism as reflected in major theorists from Plato and Aristotle to the present.

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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-term 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 term'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 varies. Instructors offering this course will announce interdisciplinary topics of various kinds (e.g., literature and politics, literature and religion, literature and science, literature and the other arts) well in advance of enrollment and will hold discussions as announced.

WR 109 *Non-Fiction and Journalism* (1)
By consent.

WR 110 *Short Story Writing* (1)
By consent.

WR 111 *Poetry Writing* (1)
By consent.

WR 112 *Playwriting* (1)
By consent.

WR 113 *Novel Writing* (1)
By consent.

WR 115 *Conference in Writing* (1)
Majors in writing program; others by consent. May be repeated.

L 184 *History of English Language* (1)

L 186 *Modern English Grammar* (1)

L 187 *Studies in Linguistics* (1)

E 188 *Reading and Conference* (1)
By consent, by arrangement. May be repeated.

CL 188 *Reading and Conference* (1)
By consent, by arrangement. May be repeated.

The Senior Comprehensive Examination. Satisfactory work on this examination, which must be taken in the second quarter of the senior year, is a requirement for graduation with a degree in English or in Comparative Literature. Students failing the exam may take it again, but not more than three times.

Graduate Courses

All graduate courses may be repeated when the topic varies.

L 200 *Studies in the English Language* (1)

L 201 *Studies in Linguistics* (1)

E 210 *Studies in Literary History* (1)

CL 210 *Comparative Studies* (1)

E 220 *Studies in Criticism* (1)

CL 220 *Problems in Translation* (1)

E 225 *Studies in Literary Genres* (1)

E 230 *Studies in Major Writers* (1)

E 235 *Methods of Literary Scholarship* (1)

WR 250 *Graduate Writers' Workshop* (1)
By consent.

WR 251 *Writing in Conference* (½ to 1½)
By consent.

E 290 *Reading and Conference* (½ to 1½)
By consent.

CL 290 *Reading and Conference* (½ to 1½)
By consent.

E 399 *Seminar in University Teaching* (1)
By consent.

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

Undergraduate Program

The main objectives of the program in foreign languages and literatures are:

1. To develop competence in the ability to understand, speak, read and write a foreign language.
2. To provide through the knowledge of foreign languages the valuable experience that is gained from deepened understanding and appreciation of the literature and culture of other peoples.

All courses in the modern foreign languages, unless specifically stated, are taught in the foreign language. In the basic courses in modern languages, the use of language laboratory facilities allows for emphasis on the development of the oral-aural language skills as well as basic reading and writing. First-year courses will meet in the classroom five times a week, and in the language laboratory twice a week. At the end of the first year, students will have attained mastery of the basic structure of the language and ability to converse on everyday topics.

At the intermediate and advanced levels, the language laboratory will continue to play an important role in improving the student's command of the foreign language. In the second year, emphasis will be put on gradually raising the level of the student's ability to read and write in the foreign language. A third-year course of two quarters will stress composition as opposed to translation, with which it is often confused. Further, a course in phonetics will aim to perfect pronunciation as well as to introduce historical and dialectal variants. The introductory courses in literature, also in the third year, will emphasize the analysis and appreciation of complete literary works rather than the study of many short selections of innumerable authors in an anthology.

Major programs are offered in French, German and Spanish. Instruction in first-, second-, and third-year Russian is also given. Self-instructional courses in Chinese, Italian, Portuguese, and Swedish are also available.

Students are encouraged to participate in programs of study abroad during the summer and the junior year.

Graduate Programs

The Master of Arts In French, German, Spanish

The candidate is expected to have the equivalent of our undergraduate major. He must take a minimum of eleven courses, eight of which must be exclusively graduate (200 level). Six of the eleven courses must be in literature and two in linguistics. 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: for students of French, usually Spanish; for students of German and Spanish, usually French. 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 the major foreign language. No thesis is required. French and Spanish students should have a knowledge of the fundamentals of Latin (equivalent to the level attained at the end of course 1B) as a prerequisite for the courses in the history of each language.

The Doctor of Philosophy In French and Spanish

A. LANGUAGE REQUIREMENTS

1a. *For French:* A reading knowledge of two foreign languages, one of which must be a Romance language and the other German or another language relevant to the student's area of specialization and subject to the approval of the Department.

1b. *For Spanish:* A reading knowledge of Portuguese and two other foreign languages relevant to the student's area of specialization and subject to the approval of the department.

2. The fundamentals of Latin (the equivalent of UCI courses 1A and 1B) is a prerequisite for the courses in Romance Linguistics and the courses in the History of the French and Spanish Language, respectively.

B. COURSE REQUIREMENTS

1. *For French*

   a. Two graduate courses in French linguistics, one of which should be diachronic and the other synchronic.

   b. A minimum of 18 graduate courses or seminars in French beyond the B.A.

c. A minimum of 3 courses outside the Department of Foreign Languages and Literatures in areas related to the field of specialization.
d. Three of the above courses in (b.) or (c.) should be:
a course in research methods,
a course in stylistics, and
a course in literary criticism.

2. *For Spanish*
a. Two graduate courses in Spanish Linguistics, one of which should be diachronic and the other synchronic.
b. A minimum of 18 graduate courses or seminars in Spanish, Spanish-American literature, and Luso-Brazilian literature beyond the B.A.
c. A minimum of 3 courses outside the Department of Foreign Languages and Literatures in areas related to the field of specialization.
d. One of the above courses in (b.) or (c.) should be a course in literary criticism.

C. TEACHING

Since the overwhelming majority of Ph.D. candidates plan to teach, this Department recognizes its responsibility to train them as teachers. Therefore, all candidates for the Ph.D. without previous teaching experience are required to teach under supervision at UCI one course in each of three quarters.

D. COMPREHENSIVE EXAMINATION

The student is admitted to candidacy if he passes by a majority vote an oral examination administered by a Candidacy Committee appointed by the Graduate Council. The Candidacy Committee is composed of five members, of whom four will be from the Department. The oral examination will be preceded by a written examination as follows:

1. *For French*
a. The student will be examined on 5 of the following 6 periods of French literature:
1) medieval
2) 16th-century
3) 17th-century

4) 18th-century
5) 19th-century
6) 20th-century

— OR —

four of these periods plus the development of a single literary genre through all periods of French literature.

b. The student will also be examined on a given literary movement (e.g. romanticism, baroque, etc.) in at least two non-French literatures.

2. *For Spanish*

a. The student will choose one of the following four fields which will constitute one half of the examination. He will also be held responsible for a knowledge of the major Luso-Brazilian works in his field of specialization:
   1) Philology and medieval literature
   2) Renaissance and Golden Age
   3) 18th, 19th, and 20th-century Spanish literature
   4) Spanish-American Literature

b. The other half of the examination will be based on the following complementary fields:
   1) one of the above fields closely related to the field of specialization
   2) the literary period of specialization in two non-Iberic countries
   3) the theory and development of a given literary genre, i.e.: the novel, the short story, epic poetry, etc.

E. DISSERTATION

A dissertation topic will be chosen by the candidate which will normally, but not necessarily, fall within one of the major fields covered by the qualifying examination:
Three faculty members appointed by the Graduate Council constitute the Doctoral Committee which supervises the preparation and completion of the doctoral thesis. The Doctoral Committee supervises a final examination, the focus of which is the content of the doctoral thesis. Ordinarily, this examination will not be given after completion of the thesis, but rather at an appropriate point during its development. Such final examinations will normally be given while the

graduate student is in residence. The Doctoral Committee certifies that a completed thesis is satisfactory through the signatures of the individual Committee members on the title page of the accepted thesis.

Foreign Languages and Literatures

SEYMOUR MENTON, *Professor of Spanish and Portuguese and Chairman of the Department*
HOWARD A. APPEL, *Supervisor of Teacher Education*
RICHARD BARRUTIA, *Associate Professor of Spanish and Director of the Language Laboratory*
MARUXA CARGILL, *Associate in Spanish*
HENRI DIAMENT, *Assistant Professor of French*
THEODORE FIEDLER, *Acting Assistant Professor of German*
JARED GORDON, *Acting Assistant Professor of Russian*
RAINER GRENEWITZ, *Acting Assistant Professor of Russian*
JOYCE HOUDEK, *Associate in Russian*
JUDD HUBERT, *Professor of French*
RENEE R. HUBERT, *Professor of French*
ALICE M. LABORDE, *Assistant Professor of French*
MAY LOH, *Associate in Chinese*
MILAN LOUPAL, *Associate in Russian*
BERT NAGEL, *Professor of German*
FELICIA O'CONNELL, *Associate in French*
ANTONIO PAGES-LARRAYA, *Professor of Spanish*
JULIAN PALLEY, *Associate Professor of Spanish*
WILM PELTERS, *Assistant Professor of German*
DARNELL ROATEN, *Lecturer in Spanish*
PAUL R. SCHIMMELPFENNIG, *Assistant Professor of German of German*
ZIDIA STEWART, *Associate in Portuguese*
FRANCO TONELLI, *Assistant Professor of French*
THEO VENNEMANN, *Acting Assistant Professor of German*
JUAN VILLEGAS, *Associate Professor of Spanish*
HENRY H. WEINBERG, *Assistant Professor of French*

Students will be placed in foreign language courses according to their years of previous study and their grades. In general, one year of high school work is equated with one quarter of UCI work. Students who present two years of high school foreign language may not enroll for credit in Foreign Language 1A; students who present three years of high school foreign language may not enroll for credit in Foreign Language 1A or 1B. Students who present

four years of high school foreign language may not enroll for credit in Foreign Language 1A, 1B, or 1C.

CHINESE

K1A-1B-1C *Fundamentals of Mandarin Chinese* (1-1-1)
A self-instructional course in the fundamentals of Mandarin Chinese for highly motivated students. Prerequisite: The consent of the examining professor.

2A-2B-2C *Chinese Reading and Composition*
Prerequisite: Chinese K1A-K1B-K1C or the equivalent.
Reading of properly graded material of cultural significance. Oral and written composition based on the readings. Five hours a week in the classroom or laboratory.

EDUCATION

102A *Methods of Teaching Foreign Languages*
Prerequisite: *Linguistics* 100 and senior standing as a foreign language major.

FRENCH

Lower Division Courses

1A-1B-1C *Fundamentals of French* (1-1-1)
The fundamentals of the language will be presented audio-lingually five hours a week in the classroom and two hours a week in the language laboratory. Graded readers will be introduced as early as possible.

2A-2B-2C *French Reading and Composition* (1-1-1)
Prerequisite: Normally three years of high school French or one year of college French. Reading of properly graded material of cultural significance. Oral and written composition based on the readings. Four hours a week in the classroom and assignments in the language laboratory when appropriate.

10A-10B *Advanced Composition* (1-1)
Prerequisite: Completion of *French* 2C or the equivalent. Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of

selected grammatical topics. Three classroom meetings per week plus one period a week for individual conferences.

11 *French Phonetics* (1)
Prerequisite: *French* 10B.

12A *Introduction to Theater* (1)

12B *Introduction to Novel* (1)

12C *Introduction to Poetry* (1)
Prerequisite: Completion of *French* 2C or the equivalent.

Upper Division Courses

The prerequisite for all upper division literature courses is *French* 12A, 12B, 12C or the equivalent.

105 *Advanced Composition and Stylistics* (1)

110 *French Civilization* (1)
Prerequisite: *French* 10B or the equivalent.

116A-116B-116C *Sixteenth Century French Literature* (1-1-1)

117A-117B-117C *Seventeenth Century French Literature* (1-1-1)

118A-118B-118C *Eighteenth Century French Literature* (1-1-1)

119A-119B-119C *Nineteenth Century French Literature* (1-1-1)

120A-120B-120C *Twentieth Century French Literature* (1-1-1)

150A-150B-150C *French Literature in Translation* (1-1-1)

199 *Special Studies in French* (1)
May be repeated.

Graduate Courses

200A-200B *Romance Linguistics* (1-1) Historical development of modern Romance Languages from Vulgar Latin. Prerequisite: *Fundamentals of Latin;* knowledge of French or Spanish or Italian.

201 *History of the French Language* (1)
Prerequisite: *Fundamentals of Latin.*

202 *Contrastive French Phonology* (1)

203 *Contrastive French Morphology and Syntax* (1)

204 *Stylistics* (1)

205 *Methods of Literary Research* (½)

206 *Literary Criticism* (1)

210A-210B-210C *Medieval Literature* (1-1-1)

216A-216B-216C *Renaissance Literature* (1-1-1)

217A-217B-217C *Classicism* (1-1-1)

218A-218B-218C *Enlightenment* (1-1-1)

219A-219B-219C *Romanticism* (1-1-1)
219D *The Realistic Novel* (1)
219E *Zola and the Naturalist Novel* (1)
220A-220B-220C *Modern French Novel* (1-1-1)
221A-221B-221C *Modern French Poetry* (1-1-1)
222A-222B *Modern French Theatre* (1-1)
250 *Studies in French Language and Literature* (1)
May be repeated.
299 *Research in French Language and Literature* (1)
May be repeated.

GERMAN

LOWER DIVISION COURSES

1A-1B-1C *Fundamentals of German* (1-1-1)
The fundamentals of the language will be presented audio-lingually five hours a week in the classroom and two hours a week in the language laboratory. Graded readers will be introduced as early as possible.

2A-2B-2C *German Reading and Composition* (1-1-1)
Prerequisite: Normally three years of high school German or one year of college German. Reading of properly graded material of cultural significance. Oral and written composition based on the readings. Four hours a week in the classroom and assignments in the language laboratory when appropriate.

10A-10B *Advanced Composition* (1-1)
Prerequisite: Completion of *German* 2C or the equivalent. Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of selected grammatical topics. Four classroom meetings per week.

11 *German Phonetics* (1)
Prerequisite: *German* 10B.

12A *Introduction to Theater* (1)
12B *Introduction to Novel* (1)
12C *Introduction to Poetry* (1)
Prerequisite: Completion of *German* 2C or the equivalent.

Upper Division Courses

The prerequisite for all upper division literature courses is *German* 12A, 12B, 12C, or the equivalent.

105 *Advanced Composition and Stylistics* (1)

110 *German Civilization* (1)
Prerequisite: *German* 10B or the equivalent.
Offered in odd-numbered years.

117A *German Literature from the Beginning to the Reformation* (1)
Offered in even-numbered years.

117B *From the Reformation to Lessing* (1)
Offered in even-numbered years.

118A-118B-118C *Lessing, Goethe, Schiller* (1)

119A-119B-119C *Romanticism; Drama, Prose of the 19th Century* (1)

120A-120B-120C *Drama, Prose, and Lyric of the 20th Century* (1)

150A-150B-150C *German Literature in Translation* (1-1-1)

199 *Special Studies in German Literature* (1)
May be repeated.

Graduate Courses

201A *History of the German Language* (1)
Offered in even-numbered years.

201B *Middle High German* (1)
Offered in even-numbered years.

202 *Contrastive German Phonology* (1)

203 *Contrastive German Morphology and Syntax* (1)

217A *German Literature of the Middle Ages* (1)
Offered in odd-numbered years.

217B *Renaissance, Reformation and Baroque Literature* (1)
Offered in odd-numbered years.

217C *German Literature from Weise to Lessing* (1)
Offered in odd-numbered years.

218A-218B-218C *The Enlightenment, The "Sturm und Drang" Period, The Classical Period* (1-1-1)

219A-219B-219C *Early Nineteenth Century Literature, Nineteenth Century Drama, Nineteenth Century Prose* (1-1-1)

220A-220B-220C *Twentieth Century German Literature: Drama, Prose, Lyric* (1-1-1)

299 *Research in German Language Literature* (1)
May be repeated.

ITALIAN

K1A-K1B-K1C *Fundamentals of Italian* (1-1-1)
A self-instructional course in the fundamentals of Italian for highly motivated students who have already studied two years of another foreign language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.

LINGUISTICS

100 *Introduction to Linguistics* (1)
101 *Comparative and Historical Linguistics* (1)
Prerequisite: *Linguistics* 100.
102 *Morphology and Phonology* (1)
Prerequisite: *Linguistics* 100.
199 *Special Studies in Linguistics* (1)
May be repeated.

PORTUGUESE

K1A-K1B-K1C *Fundamentals of Portuguese* (1-1-1)
A self-instructional course in the fundamentals of Portuguese for highly motivated students who have already studied two years of another foreign language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.
140A-140B-140C *Brazilian Prose Fiction* (1-1-1)
Prerequisite: Portuguese K1C or the equivalent.

RUSSIAN

LOWER DIVISION COURSES

1A-1B-1C *Fundamentals of Russian* (1-1-1)
2A-2B-2C *Second Year Russian* (1-1-1)
10A-10B *Russian Composition and Grammar Review* (1-1)
Prerequisite: Completion of *Russian* 2C or the equivalent. Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of selected grammatical topics. Four classroom meetings per week.

11 *Russian Phonetics* (1)
Prerequisite: *Russian* 10B.
20 *Russian Civilization* (1)

UPPER DIVISION COURSES

150A-150B-150C *Russian Literature in Translation* (1-1-1)
199 *Special Studies in Russian* (1)

SPANISH

LOWER DIVISION COURSES

1A-1B-1C *Fundamentals of Spanish* (1-1-1)
2A-2B-2C *Spanish Reading and Composition* (1-1-1)
Prerequisite: Normally three years of high school Spanish or one year college Spanish.
K1A-K1B-K1C *Fundamentals of Spanish* (1-1-1)
A self-instructional course in the fundamentals of Spanish for highly motivated students who have already studied two years of another foreign language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.
10A-10B *Advanced Composition* (1-1)
Prerequisite: Completion of *Spanish* 2C or the equivalent. Writing compositions on a variety of themes, motivated and prepared in the classroom, and arranged in order of difficulty. Review of selected grammatical topics. Four classroom meetings per week.
11 *Spanish Phonetics* (1)
Prerequisite: *Spanish* 10B.
12A *Introduction to Theater* (1)
12B *Introduction to Novel* (1)
12C *Introduction to Poetry* (1)
Prerequisite: Completion of *Spanish* 2C or the equivalent.

UPPER DIVISION COURSES

The prerequisite for all upper division literature courses is *Spanish* 12A, 12B, 12C or the equivalent.

105 *Advanced Composition and Stylistics* (1)
110 *Hispanic Civilization* (1)
Prerequisite: *Spanish* 10B or the equivalent.

117A-117B-117C *Golden Age Literature* (1-1-1)
119A-119B-119C *Nineteenth Century Spanish Literature* (1-1-1)
120A-120B-120C *Twentieth Century Spanish Literature* (1-1-1)
130A-130B-130C *Spanish-American Prose Fiction* (1-1-1)
131 *Spanish-American Modernism* (1)
132 *Spanish-American Theatre* (1)
133 *Argentine Literature* (1)
199 *Special Studies in Spanish* (1)
May be repeated.

GRADUATE COURSES

200A-200B *Romance Linguistics* (1-1)
Prerequisite: *Fundamentals of Latin.* Knowledge of French or Spanish or Italian.
201 *History of the Spanish Language* (1)
Prerequisite: *Fundamentals of Latin.*
202 *Contrastive Spanish Phonology* (1)
203 *Contrastive Spanish Morphology and Syntax* (1)
210A-210B-210C *Medieval Literature* (1-1-1)
215A-215B-215C *Golden Age Prose Fiction* (1-1-1)
216A-216B *Golden Age Lyric Poetry* (1-1)
217A-217B *Golden Age Theatre* (1-1)
220A-220B-220C *Modern Spanish Novel* (1-1-1)
221A-221B-221C *Modern Spanish Poetry* (1-1-1)
222A-222B-222C *Modern Spanish Theatre* (1-1-1)
233A-233B-233C *Twentieth Century Spanish-American Prose Fiction* (1-1-1)
234A-234B-234C *Spanish-American Poetry* (1-1-1)
250 *Studies in Spanish Language and Literature* (1)
May be repeated.
299 *Research in Spanish Language and Literature* (1)
May be repeated.

SWEDISH

K1A-K1B-K1C *Fundamentals of Swedish* (1-1-1)
A self-instructional course in the fundamentals of Swedish for highly motivated students who have already studied two years of another foreign language at the college level. Students will work at their own speed in the language laboratory and will be tested in the middle and at the end of each quarter.

DEPARTMENT OF HISTORY

Undergraduates and graduate students intending to specialize in history should obtain a copy of *Studies in History* from the departmental office.

Undergraduate Program

History studies all recorded expressions of human activity. It explains the political experiences of a nation at home and abroad. It surveys the social and economic scene, artistic expressions, intellectual achievements, scientific progress, and religious beliefs. Thus the study of history combines fascination for the quality of men and their times with the mature demands of a probing intellectual discipline.

At UCI we take for granted that the student will seek to verify factual information and relate it to the proper context of time and place. The history program goes on to make explicit what is sometimes left only vaguely implicit in history study and teaching. We present our body of knowledge with a focus on significant varieties of method: the broad overview, historiography, different forms of thematic narrative or topical analysis, the comparative approach, and the interplay of independent study with group research. With this basic understanding in hand, the student is prepared to go on learning for himself.

Our program emphasizes how the historian thinks and works. Students should hear, read, write and talk about history. Small group discussions are a feature at every level, from freshman sections to graduate colloquia. History majors should select other humanistic studies, such as languages, literature or philosophy of history. Study in depth in Social Sciences or Fine Arts is strongly recommended. Finally, work with a foreign language of the student's choice is often related to Comparative History and the Senior Project.

The six Civilization Surveys are open to all students in the university. History majors may select any two of these sequences, preferably civilizations of strongly contrasting character and development. All majors should open a "window on the world" to allow appreciation of other peoples, cultures, and points of view. Subsequent work in the major should build on one of these broad overviews, so that the student progresses logically from introductory study to more advanced work.

Upper-division courses are also open to other students, though

in some instances permission of the instructor is required. History majors begin advanced study with two courses in historiography: one of these presents the work of great historians in different societies; the other examines the broad spectrum of historical method, from humanistic insight to scientific analysis as illustrated in a single subject with varied facets. An optional third course will be offered in 1969-70, dealing with quantitative methods in history and involving use of statistics and computers.

History majors further select a minimum of four courses from a wide variety of offerings presenting history by period, theme, or topic — intensifying their interest from an earlier Civilization Survey. Each student will also select one course, at least partially related to his area of emphasis, illuminating the opportunities and limitations of the comparative method. The undergraduate program culminates in a Senior Project. Here the student will spend the first quarter in background independent study; the second quarter stresses individual research related to similar topics pursued by other students in a small pro-seminar.

Graduate Program

The Department strives to supplement traditional concerns of graduate work in History with new emphases in several areas:

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

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

The Department seeks to foster a creative intellectual relationship between student and professor. M.A. candidates set up their programs in consultation with an advisor. Ph.D. candidates do so initially with an advisor and an examination committee and after passing their qualifying examinations they continue study under a dissertation director. We wish to establish a community of fully-involved historians; for this reason, part-time graduate work

is discouraged, unless unusual circumstances suggest an exception.

Applicants for admission must meet the general requirements established by the University of California and, in addition, must submit scores for the Graduate Record Examination (GRE), *both the aptitude and advanced history tests.*

A reading knowledge of a useful and related foreign language is required for admission to all graduate study. Students are expected to demonstrate this competency by taking and passing the appropriate language examination offered by the Department *upon entry into the program.* If they cannot do so, they may choose to proceed with a reduced course load, but they may not enroll in any course requiring a foreign language.

The Master of Arts In History

An applicant for admission to the Master of Arts Program in History should have the equivalent of an undergraduate major in that subject. 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. Transfer credit from other universities is limited to one graduate course.

Admission to the Ph.D. program is a separate decision made on the basis of performance for the M.A. However, individuals hoping to proceed on to the Ph.D. should look ahead to their ultimate subject emphases in order that they may fit their work for the M.A. more usefully into their total program. It will probably be desirable, for example, for such a student to select a field of examination for the M.A. which is closely related by area, period, or topic to his intended major field for the Ph.D. Moreover, such a student may wish to take his second colloquium course in the area that will become one of his minor fields for the Ph.D.

For 1968-69 the M.A. program will be offered with a choice of five fields of examination: Europe Since 1789; Britain, 1485-1714; Britain Since 1714; America, 1492-1865; America Since 1865. The M.A. candidate must satisfactorily complete *graduate* courses as follows:

Historiography—3 courses taken as a unit;
Colloquia—3 courses, including a course in
Comparative History;
Seminar—2 courses taken as a unit;
Directed Reading in field of examination—1 course.
An M.A. field examination will be given near the end of the

quarter in which the candidate expects to complete his program. It will focus on significant events, ideas, and institutions of the chosen period and will require familiarity with the more important works and interpretations.

Candidates for the M.A. may relate their program to work for the secondary credential during the preceding or following summer and thus qualify for secondary teaching. Otherwise, the M.A. studies establish a foundation for the Ph.D. program.

The Doctor of Philosophy In History

Admission to the doctoral program is dependent upon completion of the M.A. in History at Irvine or the equivalent elsewhere. Since the M.A. and Ph.D. are closely coordinated at UCI, it is desirable that a student intending to obtain the Ph.D. here should begin his graduate work in this program. Yet the Department will welcome outstanding doctoral candidates who have achieved their M.A.s elsewhere and who are willing to accept some additional training. Evidence of superior accomplishment in previous academic work is essential. Students with an M.A. from another institution will be required to take at least two colloquia at Irvine as well as the year of graduate historiography if they have not had its equivalent.

A reading knowledge of one foreign language is required upon entry into the program. Further language requirements depend on the field of emphasis which the candidate selects:

a. An individual with a major field in United States or British History may either offer a second useful foreign language or complete, as a doctoral student, two upper-division or graduate 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.
b. An individual with a major field in non-American or non-British areas must demonstrate a reading knowledge of a second useful foreign language.

No student may enroll in a seminar requiring a foreign language without having passed his reading examination in that language. Any student who has not satisfied his language requirements by the end of the quarter before his qualifying examinations must be prepared to take a leave of absence from the doctoral program in order to devote himself to language study.

The student will prepare himself for qualifying examinations

in four fields: a major, a related minor, and a second minor in History, and the related aspects of an outside discipline.

a. The major and minor fields will either be defined topically or chosen from among the historical periods regularly offered (various combinations of themes and periods may be worked out). A student who wishes to devise topical fields other than that in the History of Science (e.g., History of Institutions, History of Western Religion, Comparative Industrialization, Comparative Social Change) should obtain the assistance and consent of both his advisor and the chairman of the Graduate Committee. With such programs, care must be taken to insure both that sufficient instructors are available, and also that an adequate concern for historical continuity is built into the approach.

b. Four historical periods will be offered by the Department in 1968-69:

United States since 1783
Late Modern Western Europe (since 1789)
Britain, 1485-1714
Britain since 1714

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

Course requirements for doctoral students include the following:

a. One two-quarter seminar in the major field (normally taken the first and second quarters of the first doctoral year).

b. Those colloquia, seminars, and/or other courses which may be worked out with the advisor. Apart from this, students are free to take *any* course on a voluntary basis. Usually, the Department will offer at least one colloquium in every major period in any given year. Topical colloquia will be developed as resources permit. Students are strongly advised to enroll in colloquia, in preference to "Directed Reading," whenever possible.

c. Those courses in "Directed Reading" (History 290) or, after passing the qualifying examinations, in "Directed Research" (History 291) which are necessary to attain the normal academic load.

Wherever feasible the doctoral candidate will be drawn into the university teaching experience, either as a Teaching Assistant or under alternative university procedures. We particularly en-

visage employing the candidate in upper-division discussion groups or other meaningful contact with students; his performance will be supervised and discussed with him by the responsible professor.

After completion of course work the student presents himself for a written examination in his major field and a subsequent oral examination touching upon his entire program, but with certain previously determined emphases. Upon demonstrating these competencies the student is advanced to candidacy for the Ph.D. and proceeds with his dissertation. The program culminates in a final oral examination over the subject area of the dissertation prior to final acceptance of the work.

History

HENRY CORD MEYER, *Professor of History and Chairman of the Department*
KENNETH P. BAILEY, *Lecturer in History and Education*
RICHARD I. FRANK, *Assistant Professor of History and Classics*
LEWIS HANKE, *Professor of History*
LAMAR MOTT HILL, *Acting Assistant Professor of History*
KARL G. HUFBAUER, *Lecturer in History*
JON S. JACOBSON, *Assistant Professor of History*
GEORGE W. KENT, *Assistant Professor of History*
R. ALAN LAWSON, *Assistant Professor of History*
ROBERT H. LUCAS, *Assistant Professor of History*
ARTHUR J. MARDER, *Professor of History*
SAMUEL C. MCCULLOCH, *Professor of History and Dean of Humanities*
KEITH L. NELSON, *Assistant Professor of History*
SPENCER C. OLIN, JR., *Assistant Professor of History*
J. ALAN ROGERS, *Assistant Professor of History*
GERALD T. WHITE, *Professor of History*

Undergraduate Courses

Civilization Surveys — open to all students

40A-40B-40C *Western Traditions* (1-1-1) fall, winter, spring
The more important ideas, institutions, and events in European History that have moulded the Western way of life.
Fall: from the ancient Near East to the fall of Rome;

'68-69 cf transfer students have had full year of our civ. sequence, we give him full credit. cf only one semester, student must take more.

Winter: from feudal origins to the age of absolutism;
Spring: from the Enlightenment to the present.

50A-50B-50C *American Thought and Culture* (1-1-1)
fall, winter, spring
American social and intellectual history, focusing on the ideas, systems of thought, and individuals most prominent in the formation of American society.
Fall: from the Colonial to the early National Period, 1607-1840;
Winter: nineteenth-century America, 1840-1900;
Spring: twentieth-century thought and culture.

60A-60B-60C *British Traditions and Institutions* (1-1-1)
fall, winter, spring
The men and events, literary and artistic works, ideals and institutions which best reveal or most deeply influenced British life.
Fall: Roman Britain to 1688;
Winter: the Glorious Revolution to 1901;
Spring: the twentieth century.

70A-70B-70C *Latin American Civilization* (1-1-1)
fall, winter, spring
A general view of the cultural, economic and political development of Spanish America and Brazil from 1492 to the present.
Fall: the colonial experience, including the European background;
Winter: nineteenth century revolutions, dictators, and the growth of nationalism;
Spring: the contemporary period; Latin America on the world scene.

80A-80B-80C *East Asian Civilizations* (1-1-1)
fall, winter, spring
Human geography of East Asia, evolution of man and culture, social and political configurations under the great empires, impact of the West, and modern problems of growth and change.
Fall: China from the Hsia to the Ming dynasties (1600);
Winter: Manchu China; Japan to the Meiji Restoration (1868);

Spring: China and Japan in the nineteenth and twentieth centuries.

90A-90B-90C *History of Scientific Thought* (1-1-1)
fall, winter, spring
Scientific Change, with its dynamics and social consequences through the ages, as revealed by extended case studies.
Fall: from the Closed World to the Infinite Universe (600BC-1700);
Winter: from Linnaean natural history to Darwinian biology (1700-1900);
Spring: from the birth of nuclear physics to the nuclear age (since 1900).

Historiography

100 *History and Historians* — studies in historical discipline and interpretation, varying in emphasis from specific individuals to the work of entire eras.

The Western Tradition (1) fall

101 *History as Art and Science* — an overview of the varieties of historical awareness, from humanistic to scientific emphases, studied in depth within an integrated subject and period.

Man and Society in the First World War (1) winter

Periods, Themes and Topics

110A-110B *Hellenic and Hellenistic Greece* (1-1)
Not offered 1968-69.

112 *The Roman Empire* (1) winter

115 *Early Medieval Europe 300-1000* (1) fall

116 *The High Middle Ages 1000-1300* (1) winter

126 *Renaissance and Reformation* (1) spring

130A *Europe in the Nineteenth Century* (1)
Not offered 1968-69.

130B *Europe in the Twentieth Century* (1) winter

153A-153B *The British Commonwealth and Empire* (1-1)
fall, winter

166A *Colonial America* (1) fall

166B *National America* (1) winter

169 *The United States in Transition 1860-1901* (1) fall

146A-146B *Constitutional and Legal History of England* (1)
Not offered 1968-69.

174 *Intellectual Currents in Twentieth-Century America* (1) Not offered 1968-69.
176A-176B *History of American Foreign Relations* (1-1) Not offered 1968-69.
180A-180B *Cultural History of China* (1-1) Not offered 1968-69.
Educ 170 *History and Philosophy of Education* (1) fall
109 *Scientists and Social Forces: the Darwinian Revolution, 1820-1880* (1) spring
114 *The Julio-Claudians* (1) spring
118 *Aspects of Medieval Britain* (1) Not offered 1968-69.
135 *Topics in European International Relations 1848-1945* (1) spring
170 *The Reform Impulse in Modern America* (1) winter
175 *California in Modern America* (1) fall
177 *Impact of the Cold War on American Society* (1) fall
183 *The Chinese Revolution 1911-1968* (1) fall

Comparative History

161 *Nineteenth-Century Latin America: Comparative Dictators and Dictatorships* (1) spring
162 *Contemporary Latin America: Comparative Revolutions (Mexico, Bolivia, Cuba)* (1) Not offered 1968-69.
179 *America in World Perspectives* (1) spring

Special Studies

190 *Independent Reading* (1) fall, winter, spring May be repeated. By consent.
191 *Special Topics* (1) fall, winter, spring May be repeated. By consent.
199A-199B *Senior Project* (1-1) winter, spring One-quarter of individual background study followed by a senior seminar; during 1968-69 projects will be offered in these areas:

Late Medieval Europe
Tudor-Stuart Britain
Twentieth-Century European Diplomacy
The American Colonial Era
Twentieth-Century American Thought
American Diplomacy Since 1900

Recent American Economic History
East Asia in the Twentieth Century
Latin America

Graduate Courses

Historiography

200 *The Nature of History* (1) fall
201 *Humanistic and Scientific Methodology* (1) winter
202 *Classic and Experimental History* (1) spring

Colloquia

207 *Science and Western Society 1789-1918* (1) fall
229 *Nineteenth-Century Europe 1789-1920* (1) fall
246 *Tudor-Stuart Britain* (1)
Not offered 1968-69.
249 *British Imperial History* (1)
Note offered 1968-69.
254 *Great Britain in the 19th and 20th Centuries* (1) spring
266 *Colonial and National America* (1)
Not offered 1968-69.
269 *Growth of the American Economy Since 1860* (1) fall
270 *Emergence of Modern America 1890-1920* (1) winter
279 *America in World Perspectives* (1) spring
280 *Europe and the Far East in the Modern Era* (1)
Not offered 1968-69.

Seminars

240A-240B *Twentieth-Century European Diplomacy* (1-1) winter, spring
250A-250B *Britain in the Tudor-Stuart Era* (1-1) fall, winter
255A-255B *Twentieth-Century Britain* (1-1)
Not offered 1968-69.
274A-274B *American Intellectual History* (1-1)
Not offered 1968-69.
277A-277B *American Economic and Social History* (1-1) winter, spring

Special Studies

290 *Directed Reading* (1-3) fall, winter, spring
May be repeated. By consent.
291 *Directed Research* (1-3) fall, winter, spring
May be repeated. By consent.

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.

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.

Graduate Program

Students entering graduate work for the first time are required to take a written comprehensive examination in order to determine their philosophical aptitude and the extent to which course work is necessary to remove deficiencies in their preparation for graduate study. The work of all graduate students will be supervised closely by their advisors. Further, there will be a close intellectual relation between graduate student and professor in order to provide the student with optimum conditions for philosophical development and to expedite his progress towards advanced degrees.

The Master of Arts In Philosophy

There is no list of course requirements for the M.A. degree.

The M.A. program in philosophy normally takes one year during which the candidate is required:

a) to pass a proficiency reading examination in a designated foreign language. This examination must be attempted no later than the second quarter of residence.[1]

b) to write a thesis on a subject to be chosen in consultation with his advisor.

c) to defend his thesis in an oral examination.

Application for admission to candidacy for the M.A. degree is not automatic, but requires formal application to the Dean of the Graduate School via the Philosophy Department office. Application must be made with the recommendation of the Philosophy Department, and should take place at the beginning of the quarter in which the student is expected to complete the requirements listed above.

The 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. degree is designed as a four-year program for the normally qualified student. In exceptional cases it may be possible to obtain the degree within three years. The requirements for the Ph.D. degree are as follows:

a) *Language examinations* to be passed in two appropriate foreign languages. If the student has passed the language requirement for the M.A. degree, it will be counted as one of the two languages required. *This requirement must be satisfied before the student will be allowed to take the qualifying examinations.*

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1. The foreign language examinations are administered by the Department of Philosophy. They are two hours in length and consist in translating, with the aid of a dictionary, passages from two books. Students wishing information as to courses to prepare them for these examinations and dates when these examinations will be given should consult the Philosophy Department office, Room 474 of the Humanities and Social Science Building (833-6526).

b) *Written qualifying examinations*[2] to be passed in three of the following fields:

(i) History of Philosophy
(ii) Epistemology and Metaphysics
(iii) Value Theory
(iv) Logic

and in one of the following:

(i) One individual philosopher (e.g., Plato, Aristotle, etc.)
(ii) A specific problem (e.g., other minds, freedom of the will, identity and change, etc.)

c) *Admission to candidacy and the writing of a thesis.* Upon successful completion of the language and qualifying examinations, 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.

d) *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.

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2. These examinations will each take three hours. They will be offered in the Spring quarter and taken during the second year of graduate work. A student failing the qualifying examinations *may* be allowed by the department to repeat them.

Philosophy

A. I. MELDEN, *Professor of Philosophy and Chairman of the Department*
GORDON G. BRITTAN, *Assistant Professor of Philosophy*
DANIEL C. DENNETT, *Assistant Professor of Philosophy*
EIKE-HENNER KLUGE, *Acting Assistant Professor of Philosophy*
JOSEPH F. LAMBERT, *Professor of Philosophy*
STANLEY M. MUNSAT, *Associate Professor of Philosophy*
NELSON C. PIKE, *Professor of Philosophy*
JASON L. SAUNDERS, *Professor of Philosophy* (Professor of Philosophy, University of California, San Diego)
GUY J. SIRCELLO, *Assistant Professor of Philosophy*
PETER WOODRUFF, *Acting Assistant Professor of Philosophy*

Undergraduate Courses

5 *Problems of Philosophy* (1) fall, winter, spring
Not offered in 1968-69.

15 *Introduction to Ethics* (1) spring

20A *History of Ancient Philosophy* (1) fall
Prerequisite: Philosophy 5 or permission of instructor.

20B *History of Medieval Philosophy* (1) winter
Prerequisite: Philosophy 20A.

20C *History of Modern Philosophy* (1) spring
Prerequisite: Philosophy 20B.

50 *Elements of Logic* (1) fall, winter, spring

65A *Philosophy of Religion* (1) winter

65B *Philosophy of Religion* (1) spring
Prerequisite: Philosophy 65A or the permission of instructor.

66 *Mysticism* (1) spring, not offered in 1968-69.

Unless otherwise specified, one course in philosophy is required for each of the following courses. In special cases the requirement may be waived. Inquiries should be directed to the staff.

100 *Metaphysics* (1) spring
Prerequisite: Philosophy 20A, B and C or permission of instructor.

105 *Philosophical Classics* (1) spring
Not offered in 1968-69.

110 *Theory of Knowledge* (1) winter
Prerequisite: Philosophy 20A, B and C, or permission of instructor.

115 *Ethical Theory* (1) winter
Prerequisite: Philosophy 15.

121 *Plato* (1) fall
Prerequisite: Philosophy 20A or permission of the instructor.

126 *Continental Rationalism* (1) spring
Prerequisite: Philosophy 20C or permission of the instructor.

127 *British Empiricsm* (1) fall
Prerequisite: Philosophy 20C or permission of the instructor.

128 *Kant* (1) winter
Prerequisite: Philosophy 20C or permission of the instructor.

130 *Philosophy of Mind* (1) winter
Prerequisite: Philosophy 20 A, B and C, or permission of instructor.

135 *Philosophy of Language* (1) winter
Not offered in 1968-69.

140 *Philosophy of History* (1) spring

145 *Social and Political Philosophy* (1) winter

150 *Introduction to Mathematical Logic* (1) winter

151 *Intermediate Mathematical Logic* (1) spring
Prerequisite: Philosophy 150 or its equivalent.

152 *Advanced Mathematical Logic* (1) fall
Prerequisite: Philosophy 151 or its equivalent.

155 *Philosophy of Logic* (1) winter
Prerequisite: Philosophy 150 or its equivalent.

160 *Introduction to Philosophy of Science* (1) fall

170 *Introduction to Aesthetics* (1) fall

171 *Theory of Art and Criticism* (1) winter
Prerequisite: Philosophy 170 or permission of the instructor.

180 *Contemporary Analytic Philosophy* (1) spring
Prerequisite: Philosophy 20 A, B and C or permission of instructor. May be repeated for credit.

189 *Philosophy of Sartre* (1) spring
Not offered in 1968-69.

190 *Directed Special Studies* (1) fall, winter, spring
May be repeated for credit.

199 *Honors Thesis* (1) fall, winter, spring
May be repeated for credit.

Graduate Courses

Since seminar and graduate course topics vary with the occasions on which they are offered, they may be repeated for credit.

200 *Seminar in Metaphysics* (1) winter
Prerequisite: Approval of the chairman.

210 *Seminar in Theory of Knowledge* (1) spring
Prerequisite: Approval of the chairman.

215 *Seminar in Ethics* (1) fall
Prerequisite: Approval of the chairman.
Not offered in 1968-69.

220 *Seminar in History of Philosophy* (1)
fall, winter, spring
Prerequisite: Approval of the chairman.

221 *Seminar in Philosophy of Plato* (1) spring
Not offered in 1968-69.
Prerequisite: Approval of the chairman.

230 *Seminar in Philosophy of Mind* (1) fall
Prerequisite: Approval of the chairman.

250 *Seminar in Logic* (1) winter
Not offered in 1968-69.
Prerequisite: Approval of the chairman.

252 *Seminar in Set Theory* (1) spring
Not offered in 1968-69.
Prerequisite: Approval of the chairman.

260 *Seminar in Philosophy of Science* (1) winter
Prerequisite: Approval of the chairman.

265 *Seminar in Philosophy of Religion* (1) fall
Prerequisite: Approval of the chairman.

270 *Seminar Topics in Aesthetics* (1) winter, spring
Prerequisite: Approval of the chairman.

299 *Directed Research* (1) fall, winter, spring
Prerequisite: Approval of the chairman.

399 *University Teacher Training* (1) fall, winter, spring
Prerequisite: Approval of the chairman.

THE SCHOOL OF PHYSICAL SCIENCES

FREDERICK REINES
Dean

The School of Physical Sciences offers both pre-professional 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 well-defined 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, whose view of nature and of number was tied to direct sense-perception. This trend to abstraction provides the major challenge to the student of the physical sciences and is the key to the unparalleled modern power of these disciplines. 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.

Undergraduate Programs

Each Department offers courses that are of value to non-majors and majors in the sciences. The programs for majors are designed to meet the needs both of students planning careers in other fields and of students planning graduate work that continues their major interest. In the belief that understanding and satisfaction follow more from depth than from breadth, the school offers no general survey course.

The undergraduate student, in consultation with his advisor, will choose courses of study leading to a major in one Department.

In carrying out this major, the student will often concentrate very heavily in a second department within the School, and, less frequently, will complete a double major receiving a single degree so labelled.

All initial courses of study for majors include mathematics through calculus, and calculus is a prerequisite to much of the junior-senior work in each major. A student interested in any of the physical sciences should continue his mathematical training beyond these prerequisite courses. Further, 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, Russian, German or French, is an integral part of the preparation for a major in physical sciences. The requirement of the School may be met by four years of work in one language (Russian, German, or French) in high school, or by two years of work in one of these languages in a college or university with a grade of C or better in the final quarter or semester of work. Enrollment in UCI language courses on a Passed-Not Passed basis is permissible; a Passed is required in the final quarter of work in a course numbered 2C. The credit by examination option for UCI language courses may also be exercised to satisfy the requirement, subject to the above restrictions concerning grades in the final quarter. Chemistry and mathematics majors may, alternatively, pass a technical reading examination in one of the languages. Details of these examinations may be obtained from the office of the relevant Department.

Precise and clear expression in written English will be expected in course work in the School. Students found wanting by the School may be required to enroll in *English* 5-10-15.

Students in the Physical Sciences are urged to acquire a working knowledge of computer programming at an early stage of their university careers. This can be done by taking *Information and Communication Sciences* 1.

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 chemistry curriculum is designed to satisfy the needs of non-science students and of students concentrating in disciplines related to chemistry as well as those of students majoring in chemistry. The year course in general chemistry *(Chemistry* 1*)* serves equally as a prerequisite to the study of chemistry at more advanced levels and as a terminal course which provides an introduction to the varied aspects of modern chemistry for those not wishing to pursue further studies in this area. It is followed by a comprehensive one-year course in organic chemistry *(Chemistry* 51*)* which is required for chemistry majors, and which will also be of particular interest and importance for students preparing for careers in biology and medicine. In the third year the chemistry major will normally enroll in the lecture course in physical chemistry *(Chemistry* 131*)* and in the three-quarter quantitative laboratory sequence *(Chemistry* 71, *Chemistry* 151, *Chemistry* 152*)*. These courses, emphasizing the quantitative aspects of modern chemistry, will likewise be valuable for graduate and undergraduate students in biology. Junior transfer chemistry majors who, after consultation with their advisor, find they are deficient in organic chemistry may postpone all or part of the quantitative laboratory sequence until the senior year. For such persons the junior year enrollment should include organic chemistry and physical chemistry. For completion of the chemistry major three additional chemistry courses are required, and these are normally taken in the senior year. They may be elected from the senior-graduate courses numbered 160-233, but no more than two quarters of undergraduate research *(chemistry* 180*)* can be counted toward the total of three. Since the field of chemistry ranges from close contact with biological sciences (biochemistry) on the one hand to physics (chemical physics) on the other, the remainder of the student's program may be selected to suit individual interests. These choices include not only the options in the senior year described above but also the choice of courses in mathematics and other sciences to meet the requirements of the major. See requirements for the chemistry major under the Academic Plan.

As an alternative to proficiency demonstrated through satisfactory course work, chemistry majors may satisfy the School foreign language requirement by passing a technical reading examination administered by the University. Details of this alternative may be obtained in the Chemistry Department Office.

The undergraduate program in chemistry emphasizes close contact with research. Students of superior ability and preparation are urged to engage in research under the direction of a staff member and should, if possible, enroll in the Honors section of the undergraduate courses.

There follow below three sample programs which illustrate some of the many possible ways in which a chemistry major might arrange his schedule of courses. Only courses required or recommended by the School or Department are listed explicitly. Six quarters of foreign language are included in all three programs on the assumption that the majority of students will choose to satisfy the School language requirement through course work. Courses listed as elective may be used as needed to satisfy University and School requirements listed in Part I of the catalogue. It should be recognized that courses such as foreign language or biological science which count toward School or Departmental requirements may be used simultaneously to satisfy University requirements if desired. Programs B and C below contain, respectively, recommendations regarding suitable course work for those wishing to pursue graduate studies in biochemistry and chemical physics.

TYPICAL PROGRAMS FOR UNDERGRADUATE CHEMISTRY MAJORS

A.	FALL	WINTER	SPRING
FIRST YEAR	*ICS* 1 *Math* 2A Elective *Chem* 1A	*Physics* 5A *Math* 2B Elective *Chem* 1B	*Physics* 5B *Math* 2C Elective *Chem* 1C
	FALL	WINTER	SPRING
SECOND YEAR	*Physics* 5C *Math* 3A Elective *Chem* 51A	*Physics* 5D *Math* 3B Elective *Chem* 51B	*Physics* 5E *Math* 3C Elective *Chem* 51C
	FALL	WINTER	SPRING
THIRD YEAR	For. Lang. Elective *Chem* 131A *Chem* 71	For. Lang. Elective *Chem* 131B *Chem* 151	For. Lang. Elective *Chem* 131C *Chem* 152
	FALL	WINTER	SPRING
FOURTH YEAR	For. Lang. Elective *Math* 100A *Chem* 211	For. Lang. Elective *Chem* 180 *Chem* 213	For. Lang. Elective *Chem* 180 *Chem* 205

B.	FALL	WINTER	SPRING
FIRST YEAR	Elective *Math* 2A *Bio. Sci.* 1A *Chem* 1A	Elective *Math* 2B *Bio. Sci.* 1B *Chem* 1B	Elective *Math* 2C *Bio. Sci.* 1C *Chem* 1C
	FALL	WINTER	SPRING
SECOND YEAR	Elective *Math* 3A *Chem* 71 *Chem* 51A	Elective *Math* 3B *Physics* 5A *Chem* 51B	Elective *Math* 3C *Physics* 5B *Chem* 51C
	FALL	WINTER	SPRING
THIRD YEAR	For. Lang. *Bio. Sci.* 101 *Chem* 131A *Physics* 5C	For. Lang. *Bio. Sci.* 102 *Chem* 131B *Chem* 151	For. Lang. *Bio. Sci.* 106 *Chem* 131C *Chem* 152
	FALL	WINTER	SPRING
FOURTH YEAR	For. Lang. Elective Elective *Chem* 211	For. Lang. Elective Elective *Chem* 233	For. Lang. Elective *Bio. Sci.* 204 *Chem* 205

C.	FALL	WINTER	SPRING
FIRST YEAR	*ICS* 1 *Math* 2A Elective *Chem* 1A	*Physics* 5A *Math* 2B Elective *Chem* 1B	*Physics* 5B *Math* 2C Elective *Chem* 1C
	FALL	WINTER	SPRING
SECOND YEAR	*Physics* 5C *Math* 3A For. Lang. *Chem* 51A	*Physics* 5D *Math* 3B For. Lang. *Chem* 51B	*Physics* 5E *Math* 3C For. Lang. *Chem* 51C
	FALL	WINTER	SPRING
THIRD YEAR	For. Lang. *Physics* 111 *Chem* 131A *Chem* 71	For. Lang. Elective *Chem* 131B *Chem* 151	For. Lang. Elective *Chem* 131C *Chem* 152
	FALL	WINTER	SPRING
FOURTH YEAR	*Math* 100A Elective *Chem* 231 Elective	*Math* 100B Elective *Physics* 112 *Chem* 180	*Math* 100C Elective *Chem* 232 Elective

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 compe-

tence 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. The first examination is the key for candidates for the M.A. degree, while 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.

The 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. The requirements for the two plans are:

PLAN I: THESIS PLAN

1. A reading knowledge of one foreign language — (Russian, German, Japanese, or French).
2. Successful completion of the area examinations.
3. Completion of an original dissertation.

PLAN II: COURSE-EXAMINATION PLAN

1. A reading knowledge of one foreign language — (Russian, German, Japanese, or French).
2. Successful completion of the area examinations.
3. Completion of 10 courses in chemistry at the 200 level with an average grade of B or better. *Chemistry* 290 may not be counted toward the total of 10, and *Chemistry* 280 may be counted only once.

   10, and *Chemistry* 280 may be counted only once.

The procedures for meeting the foreign language requirement and for passing the area examinations are described in more detail in the section on the Ph.D. degree. The dissertation 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.

The Doctor of Philosophy In Chemistry

The principal requirements for the Ph.D. degree in chemistry are six quarters in residence, admission to candidacy, and successful completion and defense of a dissertation reporting results of original research. The Ph.D. candidate must also demonstrate competence in one foreign language from among the four: Russian, German, Japanese, and French.

1. *Residence.* As many as three of the six quarters in residence may be waived for students who have had graduate work at another institution.
2. *Admission to candidacy.* Students entering graduate work in the program leading to the Ph.D. degree must pass area examinations in each of these three general fields of chemistry: physical chemistry, organic chemistry, inorganic and nuclear chemistry. These examinations are given in September, February, and May, and must be successfully completed by the end of the third examination period after intitial enrollment.

A series of cumulative examinations given each month and, more closely oriented toward current chemical research, is also taken. The cumulative examination requirement is satisfied by successful completion of four examinations before the end of the fifth quarter of residence. The student must begin the series with the first examination offered during his second quarter of residence, and he must take all subsequent examinations until the requirement is satisfied or the maximum time limit is reached.

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 eighth quarter of residence unless exceptional conditions justify an extension of time.

3. *Course Requirements.* The student is required to pass, with an average grade of B or better, the graduate courses specified for him by the Department. These courses will be chosen with his particular interests in mind, and will ordinarily include six to eight one-quarter graduate-level courses. No minimum number is specified, however, and excellent performance on the area examinations will result

in a smaller number of specified courses for the student.

4. *Foreign Language Requirements.* These requirements may be met by passing, with a minimum grade of C or Passed, a UCI language course numbered 2C or by passing a graduate reading examination administered by the University.
5. *Dissertation.* A dissertation summarizing the results of original research performed by the student under the supervision of a faculty member in the department is required for the Ph.D. degree. The criterion for acceptability of a dissertation by the department 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, three 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.

Chemistry

F. S. ROWLAND, *Professor of Chemistry and Chairman of the Department*
DAVID A. BRANT, *Assistant Professor of Chemistry*
DON L. BUNKER, *Professor of Chemistry*
MARJORIE C. CASERIO, *Associate Professor of Chemistry*
DONALD ROBERT DAVIS, *Assistant Professor of Chemistry*
ROBERT J. DOEDENS, *Assistant Professor of Chemistry*
MICHAEL H. FISCH, *Assistant Professor of Chemistry*
HAROLD H. HARRIS, *Instructor in Chemistry*
EDWARD K. C. LEE, *Assistant Professor of Chemistry*
GEORGE E. MILLER, *Lecturer in Chemistry*
HAROLD W. MOORE, *Assistant Professor of Chemistry*
THOMAS SMAIL, *Instructor in Chemistry*
ROBERT W. TAFT, *Professor of Chemistry*

Undergraduate Courses

1A-1B-1C *General Chemistry* (1-1-1) fall, winter, spring
Lecture, three hours; discussion, one hour; laboratory, four hours. Prerequisites for 1A: high school chemistry, high school physics, three years of high school mathematics. Prerequisites for 1B and 1C: successful completion of previous courses in the sequence. Concurrent enrollment in calculus will be useful but is not required. Students lacking some prerequisites may be admitted by permission of the department.
The course provides a broad introduction to the theoretical foundations and practice of modern chemistry. Principles are illustrated through the systematic study of the descriptive chemistry of the elements. The laboratory experiments demonstrate general principles and develop laboratory technique. Topics of study: stoichiometry, phenomenological gas laws, kinetic theory of gases, the electronic structure of the atom, the nucleus, the chemical bond, properties of solids, properties of liquids and liquid mixtures, chemical equilibrium, aqueous ionic equilibria, oxidation-reduction equilibria, chemical thermodynamics, chemical kinetics, periodic properties of the elements, systematic descriptive chemistry of the elements.

11A-11B-11C *Honors General Chemistry* (1-1-1)
fall, winter, spring
A course designed for the student with superior ability and preparation. The format and syllabus are identical with those of *Chemistry* 1, but topics will be developed more extensively and the laboratory will provide greater opportunity for exercise of individual initiative in design and execution of experiments. Admission by permission of the department.

51A-51B-51C *Organic Chemistry* (1-1-1) fall, winter, spring
Lecture, three hours; discussion, one hour; laboratory, four hours. Prerequisite for 51A: one year of general chemistry. Prerequisites for 51B and 51C: successful completion of previous courses in the sequence.

Development of fundamental concepts relating to carbon compounds with emphasis on structural theory and the nature of chemical bonding, stereochemistry, reaction mechanisms, spectroscopic, physical and chemical properties of the principal classes of carbon compounds. The accompanying laboratory course provides experience in modern techniques of organic chemistry, using selected experiments to illustrate the topics introduced in the lectures.

71 *Quantitative Analysis* (1) fall
Lecture, two hours; laboratory, eight hours. Prerequisite: one year of general chemistry.
The course emphasizes the development of careful laboratory technique with experiments chosen to illustrate the principles of chemical and ionic equilibrium in solution. Several classical analytical experiments familiarize the student with analytical methods and equipment, with the principles and practice of experimental error analysis, and with the precision obtainable through careful work. Acid-base equilibria are treated thoroughly including the theory of titration curves, buffer solutions, multiple equilibria, and electrometric pH determinations. Finally, chromatographic methods of separation and colorimetric methods of analysis are studied and illustrated by suitably chosen laboratory work.

131A-131B-131C *Physical Chemistry* (1-1-1) fall, winter, spring
Lecture, three hours; discussion, one hour. Prerequisites for 131A: one year of general chemistry, one year of college physics (concurrent enrollment in *Physics* 5C is acceptable), one year of calculus. Prerequisites for 131B and 131C: successful completion of previous courses in the sequence.

151 *Instrumental Analysis* (1) winter
Lecture, two hours; laboratory, eight hours. Prerequisites: *Chemistry* 131A or equivalent, *Chemistry* 71 or equivalent.

152 *Physical Chemistry Laboratory* (1) spring
Laboratory, 10 hours. Prerequisites: *Chemistry* 151 or equivalent, concurrent or previous enrollment in *Chemistry* 131C or equivalent.

160 *Qualitative Organic Analysis* (1) fall
Not offered in 1968-69.
Laboratory, 10 hours. Prerequisite: *Chemistry* 51 or equivalent.

180 *Undergraduate Research* (1) fall, winter, spring
Prerequisites: *Chemistry* 51 or equivalent, *Chemistry* 131 or equivalent, and permission of the department.
The student wishing to engage in research for credit should arrange with a member of the staff to sponsor and supervise such work.

Graduate Courses

201 *Physical Organic Chemistry I* (1)
202 *Physical Organic Chemistry II* (1)
205 *Synthetic Organic Chemistry* (1)
211 *Chemical Thermodynamics* (1)
213 *Chemical Kinetics* (1)
215 *Inorganic Chemistry I* (1)
216 *Inorganic Chemistry II* (1)
230 *Molecular Spectroscopy* (1)
231 *Quantum Chemistry* (1)
232 *Statistical Mechanics* (1)
233 *Nuclear and Radiochemistry* (1)
234 *Advanced Chemical Kinetics* (1)
251 *Special Topics in Organic Chemistry* (1)
252 *Special Topics in Physical Chemistry* (1)
253 *Special Topics in Inorganic Chemistry* (1)
280 *Research* (½ to 3)
Organic Synthesis, Reaction Kinetics, Radiochemistry, Theoretical Chemistry, Physical Organic Chemistry, Inorganic Chemistry, Physical Chemistry of Macromolecules.
290 *Seminar*

DEPARTMENT OF MATHEMATICS

Undergraduate Program

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 Cali-

fornia. 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 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.

Graduate Programs

Graduate courses are designed to meet the needs of students doing graduate work in mathematics and in such disciplines as require graduate-level mathematics for their study. Among the fields covered are analysis, algebra, functional analysis, geometry and topology, probability and statistics, ordinary and partial differential equations, logic and computers, advanced numerical analysis.

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.

The Master of Arts In Mathematics

The Master's degree programs serve a dual purpose: a) for some they serve as terminal programs of mathematical education; b) for others they serve as programs leading to study and research aimed at the Doctor of Philosophy degree. However, a candidate having no Master's degree may, upon successful completion of a proper program of study and research, receive the Doctor of Philosophy degree.

The Master's degree is offered under Plans I and II. There are no specific course requirements for the Master's degree. On the other hand, demonstrated competence and knowledge of algebra, analysis, and geometry/topology are required for this degree. Examinations, both written and oral, will be given to determine the relevant preparation of candidates. For Master's candidates, the ability to read the literature of mathematics in one of the foreign languages, French, German, or Russian, is required.

Plan I for the Master's degree requires the equivalent of the successful completion of at least eight courses (at least five at the graduate level), the writing of an acceptable research dissertation

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

Plan II for the Master's degree requires the equivalent of the successful completion of at least twelve courses (at least eight at the graduate level) and the passing of examinations (written and/or oral) designed to test the competence of the candidate in the fields of algebra, analysis, and geometry/topology.

The residence requirement for the Master's degree consists of full-time registration for three quarters just prior to the granting of the degree. It is possible for a candidate to take leaves of absence between pairs of these three quarters by making formal arrangements with the Graduate Division.

The Doctor of Philosophy In Mathematics

The Doctor of Philosophy degree requires successful completion of a program of courses, seminars, and individual study that prepares a candidate for a career in mathematical research. He is expected to have breadth in that he is required to demonstrate advanced knowledge and competence in algebra, analysis, and geometry/topology. He is expected to have depth in that he is required to be profoundly familiar with a well-defined subject in mathematics, e.g., Banach algebras, group theory, operator theory, probability theory, topology, categorical algebra.

There are two general requirements for the Ph.D.: a) the passing of written and/or oral examinations, and b) the writing and defense of a dissertation embodying creative research that makes a new and valuable contribution to the field of concentration.

Each candidate must demonstrate the ability to read the literature of mathematics in two of the languages, French, German, or Russian.

The examinination for predoctoral students are divided into two sets: those used in determining preparation of the students for admission to candidacy for the Doctor of Philosophy degree; those used to determine successful completion of all requirements for the same degree.

The first set (administered by the Department of Mathematics) may consist of both oral and written examinations. The second set is prescribed and administered by the Graduate Division operating through a committee. This committee, consisting of scholars in the field of concentration and scholars in other fields, decides on admission of students to candidacy, and then guides

and supervises candidates through their research, study and writing for the Doctor of Philosophy degree.

Doctoral candidates must be enrolled as full-time students for the six quarters preceding the granting of their degrees.

Mathematics

BERNARD *R.* GELBAUM, *Professor of Mathematics, Associate Dean, School of Physical Sciences, and Acting Chairman of Mathematics*
TAKEO AKASAKI, *Assistant Professor of Mathematics and Vice Chairman of the Department*
FRANK B. CANNONITO, *Assistant Professor of Mathematics*
DONALD A. DARLING, *Professor of Mathematics* (On leave 1968-69)
JAMES E. DELANY, *Assistant Professor of Mathematics*
WILLIAM F. DONOGHUE, JR., *Professor of Mathematics*
MARK FINKELSTEIN, *Assistant Professor of Mathematics*
JOHN M. GROVER, *Assistant Professor of Mathematics*
JOHN C. HOLLADAY, *Professor of Mathematics*
RICHARD K. JUBERG, *Associate Professor of Mathematics*
GERHARD K. KALISCH, *Professor of Mathematics*
STEPAN KARAMARDIAN, *Assistant Professor of Mathematics and in the Graduate School of Administration*
ARNOLD LEBOW, *Assistant Professor of Mathematics*
MEINHARD E. MAYER, *Professor of Mathematics and Physics*
GEORGE S. MCCARTY, JR., *Associate Professor of Mathematics* (on leave 1968-69)
WILLIAM H. MURPHY, *Lecturer in Mathematics*
CHARLES M. NAYLOR, *Assistant Professor of Mathematics*
DAVID P. RUELLE, *Visiting Professor of Mathematics and Physics*
BERNARD RUSSO, *Assistant Professor of Mathematics*
WILLIAM H. SMOKE, *Assistant Professor of Mathematics*
NOBORU SUZUKI, *Associate Professor of Mathematics*
ZENAS M. SYKES, JR., *Assistant Professor of Mathematics* (on leave 1968-69)
EDWARD O. THORP, *Professor of Mathematics*
HOWARD G. TUCKER, *Professor of Mathematics*
ROBERT W. WEST, *Assistant Professor of Mathematics*
JOEL J. WESTMAN, *Assistant Professor of Mathematics*
ROBERT J. WHITLEY, *Associate Professor of Mathematics*
JAMES J. YEH, *Professor of Mathematics*
ROBERT E. ZINK, *Visiting Professor of Mathematics*

Freshman-Sophomore Courses

(Mathematics 1A — Precalculus Mathematics is no longer available for credit and will not be taught in classrooms. The course is available through computer-assisted instruction at terminals stationed throughout the UCI campus.)

2A-2B-2C *Calculus* (1-1-1) fall, winter, spring
An integrated treatment of calculus and analytic geometry in which the subject of differentation, integration and power series expansion of function of a single real variable are discussed together with applications of these topics. Prerequisite: two years high school algebra; one year high school geometry; one-half year trigonometry.

3A-3B-3C *Calculus and Linear Algebra* (1-1-1) fall, winter, spring
A continuation of 2A-2B-2C in which calculus is studied for functions of several variables and in which the topics of linear algebra (vectors, matrices, linear transformations, etc.) are treated in the context of analysis and differential equations. Prerequisite: 2A-2B-2C.

4A-4B-4C *Liberal Arts Mathematics* (1-1-1) fall, winter, spring
A course designed to reveal mathematics as a science and an art.
4A—Structure, arithmetic and algebra of the real number system; elementary number theory and numeration (1) fall.
4B—Axiomatic method, application to group theory and geometry (1) winter.
4C—Sets, logic, introduction to calculus and applied mathematics (1) spring.
Prerequisite: One year high school algebra, one year high school geometry.

5A-5B-5C *Mathematics for the Biological, Management, and Social Sciences I* (1-1-1) fall, winter, spring
Each course in the sequence is a prerequisite for those following.
5A—Probability (1) fall
5B—Calculus (1) winter
5C—Statistics (1) spring

6A-6B-6C *Mathematics for the Biological, Management, and Social Sciences II* (1-1-1) fall, winter, spring
6A—Linear Algebra (1) fall
6B—Difference and differential equations (1) winter
6C—Numerical methods (1) spring
Prerequisite: 5A-5B-5C.

10A-10B-10C *Topics in Mathematics* (1-1-1) fall, winter, spring
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. Prerequisite: 2A-2B-2C or permission of instructor.

Junior-Senior Courses

100A-100B-100C *Ordinary and Partial Differential Equations* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

101A-101B *Topics in Mathematics* (1-1) winter, spring
Prerequisite: 3A-3B-3C.

105A-105B-105C *Numerical Analysis* (1-1-1) fall, winter, spring
Prerequisite: 100A-100B-100C or 143A-143B-143C.

110A-110B-110C *Geometry and Topology* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

120A-120B-120C *Algebra* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

130A-130B-130C *Probability and Stochastic Processes* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

131A-131B-131C *Mathematical Statistics* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

140A-140B-140C *Advanced Calculus and Elementary Analysis* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

143A-143B-143C *Applied Analysis* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

144A-144B *Introduction to Complex Analysis* (1-1) winter, spring
Prerequisite: 3A-3B-3C.

150A-150B-150C *Set Theory and Mathematical Logic* (1-1-1) fall, winter, spring
Prerequisite: 3A-3B-3C.

155A-155B-155C *Automata Theory and Recursion Theory* (1-1-1) fall, winter, spring. Not to be given 1968-69.
Prerequisite: 3A-3B-3C, or consent of instructor.

170A-170B *Statistical Methods* (1-1) fall, winter
Prerequisite: 2A-2B-2C or 5A-5B-5C and 6A.

199A-199B-199C *Special Studies in Mathematics* (1-1-1) fall, winter, spring
Prerequisite: Departmental approval.

Graduate Courses

210A-210B-210C *Real Analysis* (1-1-1) fall, winter, spring
Prerequisite: 140A-140B-140C, or the equivalent.

220A-220B-220C *Analytic Function Theory* (1-1-1) fall, winter, spring
Prerequisite: 140A-140B-140C, or the equivalent.

221A-221B *Several Complex Variables* (1-1) fall, winter
Not to be given in 1968-69.
Prerequisite: 220A-220B-220C, or the equivalent.

230A-230B-230C *Algebra* (1-1-1) fall, winter, spring
Prerequisite: 120A-120B-120C, or the equivalent.

234A-234B-234C *Topics in Algebra* (1-1-1) fall, winter, spring
Prerequisite: 230A-230B-230C, or consent of instructor.

240A-240B-240C *Differential Geometry* (1-1-1) fall, winter, spring
Not to be given in 1968-69.
Prerequisite: 110A-110B-110C or 140A-140B-140C.

250A-250B-250C *Topology* (1-1-1) fall, winter, spring
Prerequisite: 110A-110B-110C, or the equivalent.

254A-254B-254C *Topics in Topology* (1-1-1) fall, winter, spring
Prerequisite: 250A-250B-250C, or consent of instructor.

260A-260B-260C *Functional Analysis* (1-1-1) fall, winter, spring
Prerequisite: 210A-210B-210C, or consent of instructor.

261A-261B-261C *Operator Theory* (1-1-1) fall, winter, spring
Not to be given in 1968-69.
Prerequisite: 210A-210B-210C or 221A-221B-221C.

268A-268B-268C *Topics in Functional Analysis* (1-1-1) fall, winter, spring
Prerequisite: 260A-260B-260C or consent of instructor.

270A-270B-270C *Probability* (1-1-1) fall, winter, spring
Prerequisite: 130A-130B-130C or 210A-210B-210C.

271A-271B-271C *Stochastic Processes* (1-1-1) fall, winter, spring
Not to be given in 1968-69.
Prerequisite: 210A-210B-210C, or the equivalent.

272A-272B-272C *Integration in Function Spaces* (1-1-1) fall, winter, spring
Prerequisite: 271A-271B-271C or consent of instructor.

273A-273B-273C *Statistical Inference* (1-1-1) fall, winter, spring
Prerequisite: 210A-210B-210C.

280A-280B-280C *Mathematical Logic* (1-1-1) fall, winter, spring
Prerequisite: 150A-150B-150C or consent of instructor.

295A-295B-295C *Partial Differential Equations* (1-1-1) fall, winter, spring
Not to be given in 1968-69.
Prerequisite: 210A-210B-210C, or the equivalent.

299A-299B-299C *Supervised Reading and Research* (1-1-1) fall, winter, spring

DEPARTMENT OF PHYSICS

Undergraduate Program

The department offers two beginning courses, *Physics* 3 (three quarters) and *Physics* 5 (five quarters). *Physics* 5 assumes a knowledge of calculus; *Physics* 3 does not. The calculus requirement for *Physics* 5AB may be met by concurrent enrollment in *Mathematics* 2BC. Associated with each of these courses is a laboratory; the *Physics* 3 laboratory extending over two quarters, the *Physics* 5 laboratory over five quarters. The laboratory work is not intended to verify and directly reinforce the lecture material. Rather, it is intended to teach those aspects of physics and physical measurement that are more appropriately studied in a laboratory than in a lecture. Students enrolling in *Physics* 5A in the winter quarter should normally take *Information and Communication Sciences* 1 in the preceding fall quarter.

Three different curricula are available for the undergraduate study of physics. The first is intended primarily for students not

majoring in the sciences, who seek a coherent understanding of physics in one or two years. The first year *(Physics* 3*)* covers the basic laws of physics with emphasis on modern applications and insights. Junior-senior courses numbered between 100 and 109 permit the student in a second year to pursue specific parts of physics in depth without the requirement of advanced mathematics.

A second curriculum is intended for physics majors not planning to pursue the study of physics beyond the bachelor's degree level. Following *Physics* 5, these students should include in their programs several courses numbered between 130 and 149. These courses apply theory to a wide variety of phenomena, and emphasize the unifying threads of modern physics. (Choice of this curriculum in no way precludes graduate study in physics.)

For physics majors preparing for professional careers in physics, a third curriculum emphasizes the mathematical and theoretical foundation of physics. These students should include the six-quarter sequence, *Physics* 111-116, in their programs. This sequence may be started in the sophomore year, concurrent with *Physics* 5CDE. Some course work drawn from the *Physics* 131 series is also strongly recommended for students preparing for graduate work.

These curricula are intended only as general guidelines; all courses are open to adequately prepared students. Students not majoring in the sciences who are strong in mathematics may take *Physics* 5 with profit instead of *Physics* 3. A student who decides to major in physics after completing *Physics* 3 with an A or a B may, with permission of the department, transfer into *Physics* 5C. The premedical physics requirements may be met with *Physics* 3ABC, or with *Physics* 5ABC.

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 graduate students take an entrance examination shortly after arriving on campus. This examination is not "passed" or "failed." It serves only to help the student and his advisor decide on the best program of study.

In addition to formal courses, the Department offers regular colloquia and informal seminars. The graduate student is a member of an intellectual community and is expected to partici-

pate fully in the life of the department. A seminar directed at the first and second year graduate students meets once a week. The primary purpose of the seminar is to expose graduate students to phenomena of interest in current physics research. Emphasis will be placed on material not extensively treated in a phenomenological manner. The presentation will be by the students themselves, thus providing experience in public speaking. All entering graduate students are required to actively participate in the seminar for six quarters, or until the Ph.D. qualifying examination is successfully completed.

The Master of Arts In Physics

The requirements for the M.A. degree are: (1) three quarters of residence; and (2) mastery of graduate course material, which may be demonstrated either (2a) by passing, with an average grade of B or better, nine graduate courses (200) series) and a written comprehensive examination, or (2b) by passing the Ph.D. qualifying examination. Under special circumstances, a research project and thesis may be accepted in lieu of proficiency in some of the graduate course material. There is no foreign language requirement for the M.A. degree.

The 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 and must demonstrate ability in one language, Russian, German, or French.

1. *Residence.* Up to three of the six required quarters of residence may be waived for students who have had graduate work at another institution.
2. *Course Requirements.* The student is required to pass, with an average grade of B or better, six graduate-level courses (e.g., two three-course sequences) other than the basic courses, *Mathematical Physics, Electromagnetic Theory*, and *Quantum Mechanics.*
3. *Foreign Language Requirement.* This requirement may be met by passing with a grade of C or better the final examination in *Russian* 2C, *German* 2C, or *French* 2C, or by passing the Graduate School Foreign Language Test administered by the Graduate Division.
4. *Qualifying Examination.* For advancement to Ph.D. can-

didacy, a student must pass a qualifying examination consisting of a written and an oral part. The written part covers a broad range of the fundamentals of physics at the advanced undergraduate and graduate levels. Normally the M.A. comprehensive examination and the written Ph.D. qualifying examination will be identical, with a higher level of performance required for Ph.D. qualification. A student should plan to take this examination before the end of his second 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. Upon successful completion of the written examination, the student is examined orally by a committee composed of physics faculty members and one or two representatives from other Departments. This examination completes the requirements of Ph.D. qualification. Like the written examination, it may be attempted more than twice only under extraordinary circumstances.

5. *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.
6. *Defense of Dissertation.* Upon completion of the dissertation, the student will take an oral examination, open to the public, before his doctoral committee.

Physics

ALEXEI A. MARADUDIN, *Professor of Physics and Chairman of the Department*
(on leave fall 1968)
MYRON BANDER, *Associate Professor of Physics*
(on leave 1968-69)
ALFRED M. BORK, *Professor of Physics and Information and Communication Sciences*
RONNIE R. BURNS, *Assistant Professor of Physics*
PAUL E. CONDON, *Associate Professor of Physics*
PHILIP W. COULTER, *Assistant Professor of Physics*
KENNETH W. FORD, *Professor of Physics*

SYLVAN KATZ, *Lecturer in Physics*
WILLIAM R. KROPP, *Assistant Professor of Physics*
MARK A. MANDELKERN, *Assistant Professor of Physics*
MEINHARD E. MAYER, *Professor of Physics and Mathematics*
JAMES E. MERCEREAU, *Professor of Physics in Residence*
DOUGLAS L. MILLS, *Assistant Professor of Physics*
MICHAEL M. MOE, *Assistant Professor of Physics*
WILLIAM H. PARKER, *Assistant Professor of Physics*
JOHN R. PELLAM, *Professor of Physics*
FREDERICK REINES, *Professor of Physics and Dean of Physical Sciences*
GEORGE F. REITER, *Assistant Professor of Physics*
NATHAN RYNN, *Professor of Physics and Electrical Engineering*
JONAS SCHULTZ, *Associate Professor of Physics*
GORDON L. SHAW, *Professor of Physics*
THOMAS E. STARK, *Assistant Professor of Physics*

Freshman-Sophomore Courses

Physics 3 is a one-year course suitable for pre-medical students majoring in biological sciences, and non-science majors. It surveys most of the important branches of physics with strong orientation toward modern physics. Laboratory work accompanies 3A and 3B.

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 5A, 5B, 5C, 5D, and 5E. Students expecting to enroll in the entire five quarter sequence of *Physics* 5 should enroll in *Math* 3A concurrent with *Physics* 5C. Other than *Math* 2ABC there is no corequisite for students planning to enroll in only three quarters of *Physics* 5.

3A *Basic Physics I* (1) fall
Survey of particles and nature; studies of motion; heat phenomena. Facility with algebra and elementary trigonometry is assumed. Concurrent enrollment in *Mathematics* 1A is recommended for students deficient in mathematics.

3B *Basic Physics II* (1) winter
Electricity and magnetism; radiation and waves; optics. Prerequisite: *Physics* 3A.

3C *Basic Physics III* (1) spring
Twentieth century physics: relativity; quantum ideas; atomic and nuclear physics. Prerequisite: *Physics* 3B.

5A *Fundamental Physics* I (1) winter
Survey of particles and matter; Newtonian mechanics. Facility in calculus is assumed. Corequisite: *Mathematics* 2B.

5B *Fundamental Physics II* (1) spring
Relativity; electricity and magnetism. Prerequisite: *Physics* 5A. Corequisite: *Mathematics* 2C.

5C *Fundamental Physics III* (1) fall
Electromagnetism; wave phenomena, optics. Prerequisites: *Mathematics* 2ABC, *Physics* 5B. Corequisite: *Mathematics* 3A.

5D *Fundamental Physics IV* (1) winter
Quantum theory; atoms and nuclei. Prerequisite: *Mathematics* 2ABC, *Physics* 5C. Corequisite: *Mathematics* 3B.

5E *Fundamental Physics V* (1) spring
Thermodynamics and statistical physics. Prerequisites: *Mathematics* 2ABC, *Physics* 5C. Corequisite: *Mathematics* 3C.

Junior-Senior Courses

Courses numbered between 100 and 109 are second-level courses primarily for non-physics majors. Each explores a limited area of physics in depth, with emphasis on concepts and methods. Calculus is not required. No laboratory.

Courses numbered above 110 are for physics majors and other qualified students. Those numbered between 110 and 129 emphasize the mathematical and theoretical structures that have unified our understanding of nature. Those numbered between 130 and 149 emphasize particular domains of the structure of matter. Laboratory work is assigned to separate courses, the 151 series, each quarter devoted to a different area of physics.

101 *Atomic Phenomena* (1) fall
Not offered in 1968-69.
Development of the quantum theory; atomic structure and atomic reactions; interpretation of spectra. Prerequisite: *Physics* 3ABC.

102 *Nuclear Phenomena* (1) winter
Not offered in 1968-69.

103 *Contemporary Physics* (1) spring
Not offered in 1968-69.

111 *Classical Mechanics* (1) fall
Prerequisites: *Physics* 5A, 5B. Corequisite: *Mathematics* 3.

112 *Electromagnetic Theory* (1) winter
Prerequisite: *Physics* 5C. Corequisite: *Mathematics* 3.

113 *Optics* (1) spring
Prerequisite: *Physics* 112.

114 *Quantum Theory* (1) fall
Prerequisites: *Physics* 5D, *Mathematics* 3ABC.

115 *Statistical Mechanics* (1) winter
Prerequisites: *Physics* 5E, *Physics* 111.

116 *Thermodynamics* (1) spring
Prerequisite: *Physics* 115

131 *Atomic Physics* (1) fall
Prerequisite: *Physics* 5E.

132 *Nuclear Physics* (1) winter
Prerequisite: *Physics* 131.

133 *Solid State Physics* (1) spring
Prerequisite: *Physics* 131.

134 *Astrophysics* (1) fall

135 *Plasma Physics* (1)
Not offered in 1968-69.

151 *Advanced Laboratory I* (1) fall
Prerequisite: *Physics* 5E or permission of instructor.

152 *Advanced Laboratory II* (1) winter
Prerequisite: *Physics* 5E or permission of instructor.

153 *Advanced Laboratory III* (1) spring
Prerequisite: *Physics* 5E or permission of instructor.

195 *Undergraduate Research* (1)
Open to seniors and occasionally to juniors with permission of the department.

199 *Readings on Special Topics* (1)
With permission of the department.

Graduate Courses

211A-211B *Classical Mechanics* (1-1) winter, spring

212A-212B-212C *Mathematical Physics* (1-1-1) fall, winter, spring

213A-213B-213C *Electromagnetic Theory* (1-1-1) fall, winter, spring

214A-214B *Statistical Physics* (1-1) winter, spring

215A-215B-215C *Quantum Mechanics* (1-1-1) fall, winter, spring

216 *Special Relativity* (1) (Not offered in 1968-69)

221A-221B-221C *Solid State Theory* (1-1-1) fall, winter, spring

222A *Nuclear Theory* (1) winter
Not offered in 1968-69.

222B *Nuclear Theory* (1) spring
Not offered in 1968-69.

223A-223B-223C *Elementary Particle Theory* (1-1-1) fall, winter, spring

224 *Atomic and Molecular Physics*
Not offered in 1968-69.

225A-225B-225C *Plasma Physics* (1-1-1) fall, winter, spring

232 *Applications of Group Theory* (1) winter

235A-235B *Advanced Quantum Mechanics* (1-1) winter, spring
Prerequisite: *Physics* 215ABC.

235C *Advanced Quantum Mechanics*
Not offered in 1968-69.

260-279 *Special Topics in Physics* (1 each)
These courses are designed to acquaint students with the basic concepts and methods underlying current research activity in selected branches of physics.

260 *Topics in Group Theory* (1)

261 *Topics in Plasmas* (1)

262 *Topics in Modern Astrophysics* (1)

263 *Topics in Modern Optics* (1)

264 *Dispersion Relations* (1)

265 *General Relativity* (1)
Other topics will be added later.

295 *Experimental Research* (1-3)
With the approval of a faculty member who will guide his work, a student may pursue a research program in experimental physics. Typical areas include: low temperature physics, plasma physics, spectroscopy, solid state physics, and elementary particle physics.

296 *Theoretical Research* (1-3)
With the approval of a faculty member who will guide his work, a student may pursue a research program in theoretical physics. Typical areas include: solid state physics, low temperature physics, plasma physics, elementary particle physics, and general relativity.

299 *Reading of Special Topics* (1)
With special permission from a faculty member who will agree to supervise his program, a student may receive course credit for individual study of some area of physics.

THE SCHOOL OF SOCIAL SCIENCES

JAMES G. MARCH
Dean

Undergraduate and graduate education in the School of Social Sciences at UCI involve participation in an experiment. The program, faculty, and students differ substantially from conventional counterparts elsewhere. The specific details of the differences are indicated in this section of the catalog. The details are elaborations of a commitment on the part of faculty and students to a modern social science and a modern education.

The educational programs have a triple emphasis: First, they are built upon systematic empirical observation and quantitative analysis of human behavior. 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 have scant tolerance for the niceties of disciplinary boundaries. The classic division of subject matter into the domains of anthropology, economics, geography, political science, psychology, and sociology is more honored by tradition than reflective of reality. We face the pleasures and despairs of political economy, geo-psychology, ethno-sociology, and other hyphenated challenges to disciplinary orthodoxy.

Third, important new problems confront society; and social scientists have a responsibility to assist in the development of solutions to these problems. A rapidly changing technology, the pathologies of a population explosion and urban concentration, the thrust of once underdeveloped societies, the creeping mastery of disease, the strains of race relations, the tempestuous marriage of men and machines in problem solving, endemic crises in international affairs, lagging or explosive economic growth, political instability, and explorations of space provide social scientists with an extraordinary list of unsolved problems and opportunities.

A modern program in the social sciences develops skills in the use of social science techniques and knowledge in order to confront

these and other contemporary problems. In a world in which knowledge of human behavior is increasing rapidly, training in the social sciences must emphasize the basic analytical tools and the processes by which knowledge is gained. In an age in which social problems and our understanding of man violate traditional academic boundaries, training in the social sciences must emphasize the exploration of boundaries 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 sanctified neither by tradition, nor by high authority, nor by pride. From time to time the faculty expects to propose modifications in the programs. It welcomes similar proposals from students, both to meet the individual educational needs of individual students and to improve the quality and relevance of the general program.

THE FACULTY

ALBERT J. AHUMADA, JR., *Assistant Professor of Psychology*
DOUGLAS M. AMEDEO, *Assistant Professor of Geography*
DURAN BELL, *Assistant Professor of Economics*
URSULA BELLUGI-KLIMA, *Assistant Professor of Psychology*
ARNOLD BINDER, *Professor of Psychology and Director of the Program in Formal Models*
ISABEL M. BIRNBAUM, *Assistant Professor of Psychology and Director of Graduate Studies*
JOHN P. BOYD, *Assistant Professor of Anthropology and Information and Computer Sciences*
MYRON L. BRAUNSTEIN, *Associate Professor of Psychology*
ALBERTO BURELO, *Lecturer in Social Science*
MICHAEL BUTLER, *Assistant Professor of Social Science*

DOUGLAS K. CHALMERS, *Assistant Professor of Psychology*
BENJAMIN N. COLBY, *Associate Professor of Anthropology*
MICHAEL COLE, *Associate Professor of Psychology*
RICHARD L. DEGERMAN, *Assistant Professor of Psychology*
LYMAN DRAKE, *Lecturer in Political Science*
JULIAN FELDMAN, *Professor of Psychology and Information and Computer Sciences*
GORDON J. FIELDING, *Assistant Professor of Geography and Administration*
BARBARA K. FOLEY, *Assistant Professor of Sociology* (on leave, 1968-1969)
LEWIS A. FROMAN, JR., *Professor of Political Science* (on leave, 1968-1969)
JOHN H. GAY, *Lecturer in Social Science*
JOE T. HART, *Assistant Professor of Psychology* (on leave, Fall 1968)
SHEEN T. KASSOUF, *Assistant Professor of Economics*
LEO KELLER, *Assistant Professor of Psychology and Associate Director of the Computer Facility*
MARY KEY, *Assistant Professor of English and Social Science*
JEROME KIRK, *Assistant Professor of Sociology and Social Science*
CHARLES LAVE, *Assistant Professor of Economics*
JEAN LAVE, *Assistant Professor of Anthropology and Associate Dean of the School of Social Science*
MARTIN A. LEVIN, *Lecturer in Political Science*
JAMES G. MARCH, *Professor of Psychology and Sociology and Dean of the School of Social Science*
JOHN J. MCCALL, JR., *Professor of Economics*
DUANE METZGER, *Associate Professor of Anthropology and Director of Program B*
DEANE E. NEUBAUER, *Assistant Professor of Political Science*
LYMAN PORTER, *Professor of Administration and Psychology and Associate Dean of the Graduate School of Administration*
A. KIMBALL ROMNEY, *Professor of Anthropology*
ROGER W. RUSSELL, *Professor of Psychobiology and Psychology and Vice-Chancellor for Academic Affairs*
HARVEY SACKS, *Assistant Professor of Anthropology and Sociology*

MARTIN M. SHAPIRO, *Professor of Political Science* (on leave, Fall 1968)

WILLIAM F. SHARPE, *Professor of Economics*

J. SKLANSKY, *Associate Professor of Electrical Engineering and Information and Computer Sciences*

RICHARD C. SNYDER, *Professor of Political Science and Administration*

VOLNEY STEFFLRE, *Assistant Professor of Psychology and Anthropology*

RICHARD STRYKER, *Acting Assistant Professor of Political Science*

DAVID N. SUDNOW, *Assistant Professor of Sociology*

MICHAEL D. SWIGERT, *Lecturer in Social Science*

FRED E. TONGE, *Professor of Administration and Information and Computer Sciences*

JOHN WALLACE, *Associate Professor of Psychology and Administration*

KENNETH WEXLER, *Assistant Professor of Psychology*

CAROL KUPERS WHALEN, *Lecturer in Psychology*

UNDERGRADUATE DEGREES*

Social Science Degree

The basic undergraduate degree program in the School of Social Science 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. *Satisfactory completion of three basic program requirements.* Each student must have (1) credit for at least 45 courses, earned by examination, by other evaluation, or by course work; (2) a grade average of at least C on all work taken in the University of California, including other campuses; and (3) credit, earned in residence on the Irvine campus, for the last three quarters of work immediately preceding graduation.

*Students who were in residence prior to July 1, 1968, and who complete their degree requirements prior to July 1, 1972, have the option of following the old degree requirements. For a discussion of those requirements, see the 1967-1968 catalog.

B. *A basic understanding of important fields outside the social sciences.* Each student must take six courses in one school other than the School of Social Sciences and three courses in each of two other outside schools (the 6-3-3 requirement). The normal program for majors in the School satisfies the requirement of six courses in the School of Physical Sciences through the mathematics requirement. Students must enroll in at least three courses in each of two of the three other schools (i.e., Biological Sciences, Fine Arts, Humanities). These are minimal requirements: students are urged to take additional advanced work outside the social sciences.

C. *Familiarity with the mathematical, computational, and statistical tools underlying modern social science.* Normally, this requirement is met by enrolling in six courses in mathematics (*Mathematics* 5A-5B-5C, 6A-6B-6C); one course in computer science (*ICS* 1); and two courses in advanced mathematics, statistics, or mathematical social science. Students who wish to do so may substitute *Mathematics* 2A-2B-2C, 3A-3B-3C 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.

D. *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.

E. *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.

F. *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.

Students are assumed to have the ability to write with lucidity and grace and to read rapidly and with comprehension. Students who lack these abilities should plan (and will be required) to take the formal and informal instruction necessary to overcome these handicaps.

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 rather than necessarily through formal attendance in courses. 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 QUARTER	WINTER QUARTER	SPRING QUARTER
FRESHMAN	Social Science 1 Mathematics 5A Breadth requirement Breadth requirement	Social Science 2 Mathematics 5B Breadth requirement Breadth requirement	Social Science 4 Mathematics 5C Breadth requirement Breadth requirement
SOPHOMORE	Psychology 10 Mathematics 6A ICS 1 Elective	Economics 10 Mathematics 6B Elective Elective	Sociology 10 Mathematics 6C Elective Elective
JUNIOR	Upper Div. Course Upper Div. Course Mathematics 170A Elective	Upper Div. Course Upper Div. Course Mathematics 170B Elective	Upper Div. Course Upper Div. Course Elective Elective
SENIOR	Social Science 190A Elective Elective Elective	Social Science 190B Elective Elective Elective	Social Science 190C Elective Elective Elective

Program Degrees

Programs are the basic interdisciplinary subdivisions of the School. They are formed by a relatively anarchic process of organization; but, once formed, they represent major curriculum opportunities for students in the School. They have no guaranteed life-expectancy. They survive as long as students and faculty in the School find them fruitful.

A student *who has qualified for a degree in social science* (see above) may receive a degree by satisfying the requirements within constraints specified by the Program and by satisfying any additional requirements imposed by the Program. At present, there are two major programs in the School of Social Sciences, Program B (Language and Development) and the Program in Formal Models.

PROGRAM B: LANGUAGE AND DEVELOPMENT

Program B represents many of the disciplines which ordinarily comprise the Social Sciences, and some which do not. The Program focuses on the study of persons and cultures; on how they can be known, changed, developed, and on how persons and cultures are inter-related. Program B members also share a concern that social science should make a difference in the "real" world; it should be relevant to persons and cultures, not merely about persons and cultures.

Students, regardless of the degree sought, are constantly kept in touch with the central research problems of the Program. They too are expected to engage themselves as quickly as possible in the real theoretical and practical problems of research. To encourage students as well as faculty to become actively involved in cross-cultural research, Program B has field stations in Liberia, Mexico, and Brazil. And, like Old MacDonald, Program B has a farm (on the Campus). On this farm there are occasionally psycho-linguists, cats, social psychologists, chickens, economic developers, sociologists, natives from smog-free cultures, students, boat builders, peacocks, mathematical anthropologists and a variety of less exotic academic species. They all engage in research with, and on, one another.

Program B research interests focus around two areas: language, thought and behavior, and economic development and social change. Some typical courses which have been offered in the area of language and behavior include:

Language and Behavior: Consideration of the relations between human behavior and the symbolic representation of things in language.

Face-to-Face Interaction: A general survey of the literature and concepts for the study of communication behavior between two or more persons.

Structural Models of Behavior: The formal description of grammatical, semantic and social structures from various cultures. Problems in the learning and evolution of such structures.

Understanding Belief Systems: Learning how to take the point of view of a Southeast Asian. Organization of cultural grammars.

Some typical courses which are in the area of economic development and social change are:

Political Economy: An examination of the relation between

political and economic behavior.

Entrepreneurial Activity and Cultural Change: An analysis of the processes of social and cultural change with special attention to the role of entrepreneurial innovators.

Economics of Tribal Culture: Taking as unit of analysis both tribal units and the individual therein, the principles underlying exchange and production activity. An exploration in economic anthropology.

Cultural Change and Development: An interdisciplinary approach to the problems of development with strong emphasis on the cultural obstacles which impede change.

The undergraduate curriculum in Program B has few imperatives. Students are urged to discuss their study and research interests with Program B faculty. Information on course offerings are available in the main office of the School of Social Sciences.

PROGRAM IN FORMAL MODELS

The full name of this Program is the Program of Mathematical and Computer Models in the Behavioral Sciences. However, it is more frequently and conveniently referred to as the Program in Formal Models. The Program is oriented toward the use of models, mathematical and computer, as theoretical tools in the various Social Science disciplines and research areas. Represented in the Formal Models Program at the present time are the empirical areas encompassed by the traditional boundaries of Anthropology, Computer Sciences, Economics, and Psychology.

A Bachelor's Degree with a major in Formal Models implies sophistication in both mathematics and computer sciences, knowledge of empirical domains in which formal models have been or may be applied, and an ability to develop or explore in an original fashion an empirical interpretation of a formal model. The following five points specify these requirements in greater detail:

1. The concepts used in advanced courses in mathematics as well as in mathematical social science make it necessary for the student to attain the knowledge defined by completion of *Mathematics* 2A, 2B, 2C, 3A, 3B, 3C.
2. The student must achieve detailed knowledge of the use of the computer for such purposes as simulation, data analysis, on-line experimentation, and information processing. This may be accomplished by the completion of two ICS courses beyond ICS-1 or by an equivalent method of

attaining and demonstrating the knowledge.

3. A School requirement is the completion of *Social Science* (or the equivalent) and two other courses in social science or oriented toward presentation of the fundamental concepts, analytical tools, and methods of social science. Students in the Formal Models Program may satisfy this requirement only by completing two one-digit courses in the Formal Model sequence (in addition to *Social Science* 1).
4. The student is expected to become familiar with applications of the methods learned in his mathematics and computer courses to empirical problems in the social sciences. Demonstration of this familiarity is normally accomplished by completing three courses from a list of appropriate courses approved by the Formal Models faculty. The following are examples of courses which have been approved for this purpose:

   Econometrics I, II
   Mathematical Psychology I, II
   Computers in Psychological Research
   Pure Theory of Exchange I, II
   Visual Perception
   Audition
5. The senior project must involve the development or exploration of a formal model in a social science domain.

A Bachelor's Degree in Formal Models provides particularly appropriate training for those students who plan to do graduate work in such fields as Mathematical Economics, Mathematical Psychology, Mathematical Sociology, Mathematical Anthropology, and Computer Simulation. The emphasis is upon the methodological and quantitative aspects of theory construction and testing in the social sciences. Content is deliberately subordinated. The Formal Models' faculty believes that theories in the social and behavioral sciences will become more and more mathematical and computer in form and that an orientation to that kind of development is more important than a survey of the history of empirical research and the status of current conceptual systems.

Discipline Degrees

A student *who has qualified for a degree in social science* (see above) may receive a degree in one of the disciplines (e.g., anthropology, economics, geography, political science, psychology, soci-

ology) if he, *in addition*, passes a general examination in the discipline. Ordinarily the examination will be the Graduate Record Examination Advanced Test in the discipline. Reading lists appropriate for self-study in preparation for the examinations are available from the School office.

Program Planning

Transfer Students

Freshmen and Sophomores. Students transferring to UCI as freshmen or sophomores will fulfill the regular requirements of the four-year program either at UCI or through transfer of credit for comparable work elsewhere.

Juniors. Junior transfers with good records at other accredited colleges and universities will normally be presumed to have satisfied the freshman and sophomore requirements for the social science curriculum. Students anticipating transfer to UCI in their junior year, however, should attempt to plan their program so as to anticipate the special requirements of the program. Every effort will be made to accommodate individual variation in background, provided the student is prepared to commit himself to intensive work in areas of deficiency.

Normally, the typical two-year program is simply the last two years of the regular four-year program, *except* that students who have not satisfied the freshman and sophomore mathematics requirements in the School must do so before graduation (see the section on "Mathematics and Social Science").

Juniors planning to transfer in to the School at the winter or spring quarter will often find that course schedules make it difficult or impossible to complete the program in less than seven or eight quarters of work. Such students should consult with the School as early as possible to determine whether the program they intend to pursue will be feasible.

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. No student will be admitted to senior status in the School until he has demonstrated the knowledge in *Mathematics* 5A-B-C and 6A-B-C, or equivalent.

Academic Advisors

Each student majoring in a discipline within the School is assigned to a faculty advisor on entry. Subsequent changes in advisors are made on request of either the student or the advisor. The student is responsible for his own program and for meeting the requirements for graduation. The advisor provides advice in broad educational planning, help in overcoming bureaucratic impediments to education, and access to the faculty. Students who elect to do so may dispense with a faculty advisor.

Special Programs

Pre-graduate Training. Students planning to pursue graduate work in the social sciences enroll in one of the regular social science programs. In addition, they should supplement their program by anticipating language requirements at major graduate schools and by intensive work in areas outside the School 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.

Information and Computer Science. A special program in information and communication science combines the regular undergraduate work in one of the social science disciplines with additional junior-senior work in computer science, mathematics, and engineering.

Pre-law. Students interested in entering law school upon completion of their baccalaureate can major in any of the social sciences. Specific requirements imposed by specific law schools can be met through electives.

Teacher Training. Students interested in preparing for elementary school teaching or for secondary and junior college teaching in the social sciences follow the regular program for majors in the social sciences. They complete their program by electing courses that will satisfy the requirements for teacher certification.

Administration. Undergraduate degree programs in business and public administration are not offered at UCI. Students preparing for a career in business or government can major in social science. Students particularly interested in business administration are usually advised to concentrate work in economics. Students interested in public administration are usually advised to emphasize economics and political science. In addition, the School offers, in conjunction with the Graduate School of Administration, a special five-year program for select students leading to both a

baccalaureate in the social sciences and a Master's degree in administration. Application for admission to the program is made in the spring of the junior year.

Mathematics and Social Science

Competence in basic mathematics is a necessary skill for a modern social scientist. 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:

Information and Computer Sciences 1: *Digital Computing*
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*

To complete the requirement, a student normally chooses two courses from an approved list of courses in mathematics, computing, or mathematical social science, most commonly *Mathematics* 170A-170B.

Students who wish to do so may substitute the knowledge represented by *Mathematics* 2A-2B-2C and 3A-3B-3C for *Mathematics* 5A-5B-5C and 6A-6B-6C. 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-5B-5C and *Information and Computer Science* 1 during their first year at UCI. Such students ordinarily enroll in *Mathematics* 6A-6B-6C 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. A graduate student without college mathematics should anticipate that his program will require additional time to complete.

All students are expected to have competence in intermediate algebra on entrance. Competence can be demonstrated by completion of a one-year course in intermediate algebra in high school,

junior college, or University Extension, or by a score of 600 on the quantitative part of the College Boards.

Nonmajors

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. The individual topics for each quarter are announced at the time of pre-registration.

COURSES OF STUDY

"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). Consequently, it is not meaningful to list courses in the usual way.

The School schedules five types of courses:

General Introductory Courses

These courses (one digit courses) are intended to introduce any student to the analytical and descriptive material of social science.

Self-Instructional Courses

The basic introductory courses in each discipline (*Anthropology* 10, *Economics* 10, *Geography* 10, *Political Science* 10, *Psychology* 10, and *Sociology* 10) are self-instructional. The educational activities involved include a wide range of self-pacing work (e.g., reading, computer-assisted learning, films) and are designed to provide a student with a basic introduction to the concepts of the discipline.

Special Topics Courses

To supplement the basic courses and to provide both majors and nonmajors (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. Recent special topics courses have included:

Rites and Rituals of American Society: An examination of American Society from the point of view of a social anthropologist. Customs, rituals, feasts, and ceremonies in the modern world.

Quantitative Analysis of Economic Problems: Critical analysis of real world social and economic problems using simple quantitative techniques. Data problems and their solution.

Politics of Everyday Life: Politics as an everyday phenomenon. The politics of human relationships; strategies and tactics; the learning of political styles. Human behavior as political behavior.

Urban Policy Problems: An examination of the major policy problems of American cities. Minority groups, transportation, education, renewal programs, housing, law enforcement, welfare.

Law and Society: A consideration of law and courts in modern societies by tracing the first emergences of distinctly legal phenomena from more generalized aspects of social control.

Psychology of Creativity: Creativity in the science and arts. An examination of self-reports from creative persons, factor-analytic studies, experimental studies, and clinical-psychometric studies.

Study of Norms: Systematic examination of the notion of a rule in describing social activity.

Computer Technology in Social Science: Applications of computer technology to the social sciences emphasizing data analysis, simulation, real-time experimentation, and computer-assisted learning.

Generally speaking, special topics courses are not repeated each year. Rather, the student samples from those courses available in a particular quarter. In each quarter some special topics courses are open to students without previous work in the discipline. These courses are numbered with numbers between 130 and 189 and between 280 and 289.

Individual Study Courses

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 enroll-

ing in an individual study course. Such courses are numbered 199 (undergraduate) and 299 (graduate).

Project Courses

A student with the interest and competence to gain from such an experience may, with permission of his advisor, enroll in a senior project course within which he completes a substantial paper. These courses are numbered 190A-190B-190C. Any student may, with approval of the faculty member, undertake a project as an individual study or individual research (199 or 299) course.

GRADUATE DEGREES

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.

The doctoral programs are designed to allow each graduate student to develop, 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 to serve as a 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. Of particular interest for graduate study are the inter-disciplinary programs in Language and Development and in Formal Models.

The faculty envisions a student's Ph.D. program to be of approximately three to four years' duration. The student devotes the first year to the explorations and preparation necessary to defining and mastering a coherent field of study. He continues this preparation into the second year, during the course of which he also submits a dissertation proposal. The third year normally is 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 are expected to acquire mathematical and language tools appropriate to their studies. For the mathematical requirements, see the section on "Mathematics and Social Science" above.

For further information on graduate programs, financial aids, and other details, write to the Dean of the School of Social Sciences for the booklet "Graduate Studies in the School of Social Sciences."


DYNAMICS
MARKOV CHAIN
A DIGITAL COMMUNICATION PROBLEM
IS THIS PULSE 0 OR 1 ?
RESET
WRONG
RIGHT
MACHINE
HUMAN

THE 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 an industry, the government, or a university. Programs at all levels emphasize the fundamentals underlying engineering so as to make easy future maintenance of engineering competence by either formal or informal study. Thus programs of study in the School of Engineering will equip UCI graduates with adequate intellectual tools to enter the profession after a short internship and to provide for the continued updating of their technological knowledge in the presence of a rapidly expanding technology and the changing needs of society.

At the undergraduate level, the program now being offered is that emphasizing electrical engineering. In the future several other programs will be added in fields such as civil, mechanical, chemical, and materials engineering. While much of the curriculum will be common to all fields of engineering, opportunity will be afforded students to do elective work in the areas of their special interest. Thus, in the junior and senior years students will be able to elect courses in addition to those required. It is expected that each student will devote approximately 40% of his time over the four years to the scientific and mathematical backgrounds pertaining to the various engineering fields; the purpose of this intense study of the sciences and mathematics is to make sure that graduates are extremely well grounded in the laws and constraints of logic and nature. Another 20% of the program will be assigned to the study of the fine arts, humanities, and the social sciences. The remaining 40% will comprise engineering subjects.

At the graduate level, programs of study become less and less rigidly structured the farther one goes; at the same time specialization becomes more intense the deeper one gets into his educational program. 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.

Undergraduate Programs

Admission

High school students wishing to begin their engineering programs at UCI should seek admission to one of the Schools, preferably the School of Physical Sciences or the School of Social Sciences, whose admission requirements are stated elsewhere in the Catalogue. 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 during the freshman and sophomore years.

Junior students are admitted to the School of Engineering upon completion of a freshman-sophomore program in one of the Schools at Irvine or at another college including junior colleges. Students seeking admission to the School of Engineering must satisfy the University requirements for admission to advanced standing, have completed 21 courses (84 quarter units) with an overall average of "C" (2.0), and must have completed the specific requirements for the junior courses to be undertaken in the School of Engineering. This means completion of the equivalent of UCI Physics 5E and Mathematics 3C.

Programs of Study

Students should feel free to follow any program they feel is meaningful to them but they should be sure to complete the requisite physics and mathematics for admission to junior courses in engineering and be sure that they can meet the graduation requirements for the School of Engineering at the end of their allotted collegiate period. Normally a student also will wish to complete the secondary science requirement, the digital computing course, and the courses required in fine arts, humanities, and social sciences in the freshman and sophomore years. It would be well for students expecting to proceed to graduate study for the M.S. or Ph.D. degrees to elect a foreign language, preferably German or Russian, in the freshman or sophomore years. Students in junior colleges may wish to elect engineering courses in the freshman and sophomore years; such courses while not prerequisite to courses in the School of Engineering will be accepted in satisfaction of the

overall elective requirements of the School. *Since UCI elects not to offer freshman and sophomore courses in engineering subjects and since other campuses do, students majoring in one of the Schools at Irvine may have difficulty in completing their programs on other UC campuses in six quarters.** For transfer to Irvine there are no prerequisites for junior work in the School of Engineering other than the requisite mathematics and physics courses.

The junior year in the School of Engineering include two required courses in engineering and natural science or mathematics electives running throughout the year. Since some students will be entering their junior year without having had a course in computer science programming, there is an opportunity in the beginning of the junior year to make up this or some other deficiency. Beginning with the second quarter, a technical elective program provides students an opportunity to do more work in the particular field of engineering appealing to them.

In the senior year additional electives will be available to follow the programs begun in the junior year. The single required engineering course in the senior year is Engineering Design.

Students in the School of Engineering should bear in mind the general campus policy which permits them to take courses in non-contiguous areas on "passed - not passed" basis. Non-contiguous areas with respect to engineering are those in the fine arts, humanities and social sciences.

It should be emphasized that the programs of study in the School of Engineering are tailor-made to the desires and objectives of individual students. Students will work out programs of study with their faculty advisor so as to maximize the educational experience offered by the Irvine campus. Students must realize that they, and they alone, are responsible for the planning of their own programs and for satisfactory completion of the graduation requirements; however, the faculty stand ready to give every assistance and necessary advice in the planning of programs.

FIGURE 1 shows in block form a typical program of study for a student terminating at the B.S. level or for a student wishing to continue to the M.S. The Ph.D. program is not included in FIGURE 1 since there are no specific course requirements.

* Students expecting to transfer elsewhere should consult with the School of Engineering immediately upon entry.

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

Freshman	Math 2	ICS 1	Chem. 1 or Bio. Sci. 1	Soc. Sci. 1
Sophomore	Math 3	Physics 5	Humanities or Fine Arts Electives	Soc. Sci. Electives
Junior	Math Elective	Engr. 100 Engr. 102	Engr. 101 Engr. 103	Engineering Elective
Senior	Math or Physics Elective	Engr. 104	Engineering Elective	Engr. Elective
M.S.	Math Elective	Graduate Engineering Elective	Graduate Engineering Elective	

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, but 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 delving into a subject in considerable depth while at the same time developing breadth. Graduate study toward the M.S. and Ph.D. degrees is applied science oriented and should provide an excellent base for future professional growth through excellent 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 in allied science obtained with an acceptable level of scholarship from an institution of recognized standing. Those seeking admission without the requisite scholarship record, may, in some cases, undertake remedial work; if completed at the stipulated academic level, they will be admitted to full graduate standing. The Graduate Record Examination is required.

The Master of Science in Engineering

Those wishing to pursue graduate work in control system theory, plasma physics, quantum electronics, communication and information systems, digital computer systems, optimization theory, and water resources will find faculty prepared to offer courses and guide their research. For the M.S. degree with thesis nine (9) courses will be required, of which at least six (6) are graduate level courses; a maximum of two (2) research courses may be submitted. For the M.S. degree without thesis nine (9) courses will be required, of which at least six (6) are graduate level and may not include research credit. The M.S. thesis must be an exercise demonstrating a capability of undertaking a study original with the student and carry it through to a conclusion satisfactory to at least three (3) 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 faculty of the School. Part-time students will be limited to one course per quarter if fully employed and those holding research or teaching assistantships will not be permitted a full four course load. Engineers in industry may find it convenient to complete some undergraduate courses in University Extension at one of the centers; up to one-half of his program may be completed in Extension. Courses taken on another campus of the University will be accorded full credit if taken after admission to Irvine; up to three courses will be credited upon admission if taken in Extension or on another campus of the University, or in another university.

The Doctor of Philosophy in Engineering

As is common in other schools and colleges, the doctoral program in engineering leading to the Ph.D. will be tailored to the

individual needs and background of the student. There will be no course requirements but rather several milestones to be passed: (1) admission to the Ph.D. program by the faculty of the School; (2) passage of the preliminary examination assessing the student's background and his potential for success in the doctoral program; (3) satisfaction of the teaching requirements required of all doctoral students; (4) research preparation including languages; and (5) completion of a significant research investigation. The degree is granted upon the recommendation of the Doctoral Committee and the Dean of the Graduate Division. Throughout the doctoral program it is expected that the student will be resident in the School. Doctoral programs must be completed in seven (7) calendar years from the date of admission.

Some financial aids such as research and teaching assistantships will be available so that each doctoral student, after he has passed the preliminary examination, will have a staff appointment in the School of Engineering.

Special Programs

Teacher Training:

Students interested in the preparing for a secondary and junior college teaching credential in an allied and contiguous field may follow the regular program for engineering majors. They complete their total program by satisfying the requirements for a secondary or junior college credential in the fifth year. Students interested in this program should contact the Office of Teacher Education at the time they enter the School of Engineering.

Administration:

Undergraduate degree programs in business and public administration are not offered at UCI. Engineering students wishing to prepare for a career in business or government can major in engineering and elect those prerequisite courses required for the program of study in the Graduate School of Administration. Students interested in engineering administration are advised to make this desire known early in their collegiate career.

Information and Computer Science:

Both graduate and undergraduate students may participate in the courses and programs offered in this interdisciplinary area. Students wishing to pursue a program of study at the graduate or undergraduate level should consult with their advisor.

THE FACULTY

CASPER W. BARNES, JR., *Professor of Electrical Engineering*
NEIL J. BERSHAD, *Assistant Professor of Electrical Engineering*
B. E. BONA, *Lecturer in Electrical Engineering*
RICHARD R. BROCK, *Assistant Professor of Civil Engineering*
RALPH B. CONN, *Lecturer in Electrical Engineering*
B. N. EDWARDS, *Lecturer in Electrical Engineering*
HIDAYA GAMO, *Professor of Electrical Engineering*
CHARLES G. HILTON, *Lecturer in Engineering*
DAVID ISAACS, *Associate Professor of Electrical Engineering*
LESTER M. MINTZER, *Lecturer in Electrical Engineering*
PAUL G. MORANDA, *Lecturer in Engineering*
JOHN G. RAU, *Lecturer in Engineering*
NATHAN RYNN, *Professor of Electrical Engineering and Physics*
ROBERT M. SAUNDERS, *Professor of Electrical Engineering, Dean, School of Engineering*
J. W. S. SCHERFIG, *Assistant Professor of Civil Engineering*
ROLAND SCHINZINGER, *Assistant Professor of Electrical Engineering*
KHALIL SEYRAFI, *Lecturer in Electrical Engineering*
JACK SKLANSKY, *Associate Professor of Electrical Engineering and Information and Computer Science*
EARLE L. STEELE, *Lecturer in Electrical Engineering*
ALEXANDER TAKACS, *Lecturer in Engineering*
DAVID T. TUMA, *Assistant Professor of Electrical Engineering*

Undergraduate Courses

100A-100B *Lumped Parameter Analysis* (1-1)
fall, winter
Prerequisites: Physics 5C, Math 3C, ICS 1
(May be taken concurrently)

101A-101B *Continuous Media and Fields* (1-1)
fall, winter
Prerequisites: Physics 5E, Math 3C, ICS 1
(May be taken concurrently)

102 *Signal Theory* (1) fall, spring
Prerequisite: Engr. 100B

103 *Energetics* (1) spring
Prerequisite: Engr. 101B

104A-104B-104C *Engineering Design* (1-1-1) fall, winter, spring
Prerequisites: Engr. 102, 103

110A-110B *Electronics* (1-1) winter, spring
Prerequisites: Engr. 100A

111A-111B-111C *Network Analysis and Synthesis* (1-1-1) fall, winter, spring
Prerequisite: Engr. 100A

112 *Active Electronic Circuits* (1) spring

115A-115B-115C *Systems Engineering* (1-1-1) fall, winter, spring
Prerequisites: Engr. 126ABC or Math 130ABC

122 *Introduction to the Logic and Organization of Digital Computers* (1) fall
Prerequisite: ICS 1

123A-123B *Computer and Systems Programming* (1-1) winter, spring
Prerequisite: Engr. 122

124A-124B *Switching Circuits and Computer Logic* (1-1) fall, winter
Prerequisite: Engr. 122

126A-126B-126C *Random Processes and Systems Theory* (1-1-1) fall, winter, spring
Prerequisite: Engr. 102

130A-130B-130C *Materials and Fields* (1-1-1) fall, winter, spring
Prerequisite: Engr. 101B

134 *Mechanics of Materials* (1) fall
Prerequisite: Math 3C

138A-138B-138C *Masers, Lasers, and Modern Optics* (1-1-1) fall, winter, spring
Prerequisite: Engr. 101B, 102

140A-140B-140C *Control System Theory* (1-1-1) fall, winter, spring
Prerequisite: Engr. 102, Math 100C

146A-146B *Astrodynamics and Rocket Navigation* (1-1) fall, winter

*150A-150B-150C *Structural Mechanics* (1-1-1) fall, winter, spring
Prerequisites: Engr. 134, 185
(May be taken concurrently)

155 *Fluid Mechanics* (1) spring
Prerequisites: Engr. 101B
(May be taken concurrently)

162 *Fundamentals of Water Engineering* (1) winter
Prerequisites: Engr. 163
(May be taken concurrently)

163 *Fundamentals of Water and Waste Treatment* (1) fall
Prerequisites: Chemistry 1ABC

*185 *Soil Mechanics* (1) fall
Prerequisites: Engr. 134

198A-198L *The Engineer and Engineering* (½-½-½) fall, winter, spring
Prerequisites: None
(Can be started in any quarter)

Graduate Courses

201A-201B-201C *Electromagnetic Theory* (1-1-1) fall, winter, spring
(Offered as Physics 213A-213B-213C)
Prerequisites: Engr. 130C

210A-210B-210C *Linear Optical Processes* (1-1-1) fall, winter, spring
Prerequisite: Engr. 130C

*213A-213B-213C *Quantum Electronics* (1-1-1) fall, winter, spring
Prerequisites: Engr. 130C, Physics 114 or 131 (or equivalent)

**220A-220B-220C *Pattern Recognition* (1-1-1) fall, winter, spring
Prerequisites: Math 130ABC

‡221A-221B *Trainable Automata* (1-1) winter, spring
Prerequisites: Math 130C

†225A-225B-225C *Decision, Detection and Estimation Theory* (1-1-1) fall, winter, spring
Prerequisites: Engr. 126ABC

**226A-226B-226C *Communication and Information Theory* (1-1-1) fall, winter, spring
Prerequisite: Engr. 126ABC

231A-231B *Guided Electromagnetic Waves* (1-1) fall, winter
Prerequisites: Engr. 101AB, 130A

235A-235B-235C *Properties of Plasmas* (1-1-1) fall, winter, spring
Prerequisites: Engr. 101B, Physics 112, 114, Math 143ABC
(Also offered as Physics 225ABC)

**240A-240B-240C *Random Processes In Control Systems* (1-1-1) fall, winter, spring
Prerequisites: Math 130ABC, Engr. 241ABC

†241A-241B-241C *Optimization of Control Systems* (1-1-1) fall, winter, spring
Prerequisites: Engr. 140ABC, Math 140ABC

263A-263B-263C *Advanced Water Treatment and Resources Technology* (1-1-1) fall, winter, spring
Prerequisites: Engr. 162, 163, 104ABC

*265A-265B *Water Treatment Chemistry* (½-½) fall, winter
Prerequisites: Chemistry 1ABC, Engr. 163

*266 *Public Health Aspects of Water Resources Engineering* (1) winter
Prerequisites: Biology 1ABC

*268A-268B-268C *Water Resources Systems—Planning, Design, and Evaluation* (½-½-½) fall, winter, spring
Prerequisites: Engr. 104ABC, Math 130A, Engr. 263ABC

298 *Group Seminars or Studies* (varies) fall, winter, spring
Prerequisite: Consult section instructor
298-1 *Control Systems* (1)
298-2 *Plasmas* (½)
298-3 *Optimization Theory* (½)
298-4 *Quantum Electronics* (1)
298-5 *Communication Theory* (½)
298-6 *Trainable and Adaptive Systems* (½)

299 *Individual Study or Research* (1-1-1)
(May be repeated each quarter)

* To be given first time 1969-70.
** Offered odd numbered years (fall) only.
† Offered even numbered years (fall) only.
‡ Offered odd numbered years (winter) only.

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.

Undergraduate Program

The undergraduate program in information and computer science is designed both for students preparing for professional careers and for students preparing for graduate study in the field. 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 presentation are the underlying theme of the program. As in all UCI undergraduate programs the undergraduate student in information and computer science will normally spend about half of his time in general education and the other half of his time in courses required by the department.

Undergraduate degree programs in information and computer science are a relatively new development in a relatively new field. The development of such programs is based on the premises that a special program in the field can provide a better preparation for students who will be concerned with the problems of information and computer science and that the field is now sufficiently developed to fruitfully support such a program.

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.

Service Courses

Students interested in digital computer programming will normally begin their studies with Introduction to Digital Computation and continue in the programming sequence with Computers and Programming and Information Structures as far as their interests require and their programs permit. Students who are doing, or planning to do, extensive work with numerical problems are advised to consider courses in numerical analysis. Short courses in particular computer languages will also be available, and the student who has mastered the topics in the programming sequence should be able to learn any of these languages in such short courses.

THE FACULTY

A. M. BORK, *Professor of Physics and Information and Computer Science*

J. P. BOYD, *Assistant Professor of Anthropology and Information and Computer Science*

D. J. FARBER, *Lecturer in Information and Computer Science*

JULIAN FELDMAN, *Professor of Psychology and Information and Computer Science and Chairman of the Department of Information and Computer Science*

LAURENT SIKLOSSY, *Assistant Professor of Information and Computer Science*

JACK SKLANSKY, *Associate Professor of Electrical Engineering and Information and Computer Science*

F. M. TONGE, *Professor of Administration and Information and Computer Science*

ASSOCIATED FACULTY

G. W. BROWN, *Professor of Administration and Information and Computer Science and Dean of the Graduate School of Administration*

R. W. GERARD, *Professor of Biological Sciences, Dean of the Graduate Division, and Director of Special Studies*

R. M. GORDON, *Lecturer in Administration and Information and Computer Science and Director of Computer Facilities and Information Services*

J. A. KEARNS, *Lecturer in Administration and Information and Computer Science*

Introductory Courses

ICS 1 *Introduction to Digital Computation*
No prerequisite

ICS 2 *Computers and Programming*
Prerequisite: ICS 1

ICS 3 *Information Structures*
Prerequisite: ICS 2

Advanced Courses

ICS 110A-110B *Programming Languages and Systems*
Prerequisite: ICS 3

ICS 120A-120B *Computer Organization*
Prerequisite: ICS 2

ICS 130A-130B *Formal Models in Information and Computer Science*
Prerequisite: Math 2C

ICS 180 *Special Topics*

ICS 190A-190B-190C *Senior Seminar*

ICS 199 *Individual Studies*

Graduate Courses

ICS 280 *Special Topics*

ICS 299 *Individual Research*

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 or athletic teams.

THE FACULTY

RICHARD L. DAVIS, *Associate Supervisor of Physical Education*

LINDA B. DEMPSAY, *Junior Supervisor of Physical Education*

ALBERT M. IRWIN, *Associate Supervisor of Physical Education*

MYRON MCNAMARA, *Lecturer*

EDWARD H. NEWLAND, *Lecturer in Physical Education*

RAYMOND H. THORNTON, *Associate Supervisor of Physical Education*

TIMOTHY M. TIFT, *Lecturer in Physical Education*

Courses

1A-1B-1C *Physical Education* (1/6-1/6-1/6) fall, winter, spring
May be repeated.
Sections in archery, badminton, body building, rowing, dance (social and folk), fencing, golf, gymnastics, handball, judo, lifesaving, scuba diving, squash racquets, swimming, tennis, volleyball, water polo, individual exercises for women, equitation and horsemanship, and sailing.

UNIVERSITY STUDIES

The University Studies program is an organization of Fellows and Senior Fellows of the Irvine faculty dedicated to interdisciplinary undergraduate education. As Fellows and Senior Fellows, faculty members are independent of their membership in various academic divisions of the campus. It is their aim to provide a faculty organization and curriculum that is antidivisional while at the same time it is friendly to the Irvine arrangement of disciplines into Schools. At the present time the faculty offers an interdisciplinary series of classes called University Studies I, II, and III. The course is limited to freshmen except for those sophomores who are completing a sequence of three classes begun during their freshman year.

Faculty members engaged in the program expect to make themselves available to students not merely as specialists but as specialists who have a particular interest in how their own research and their discipline in general are related to other disciplines, to contemporary society, and to philosophical issues of the day. Each University Studies class explores a specific issue or problem; each teacher develops a program of readings, experiments, and discussions.

Announcement of specific courses to be offered in 1968-1969 is made in a brochure published in the preceding June.

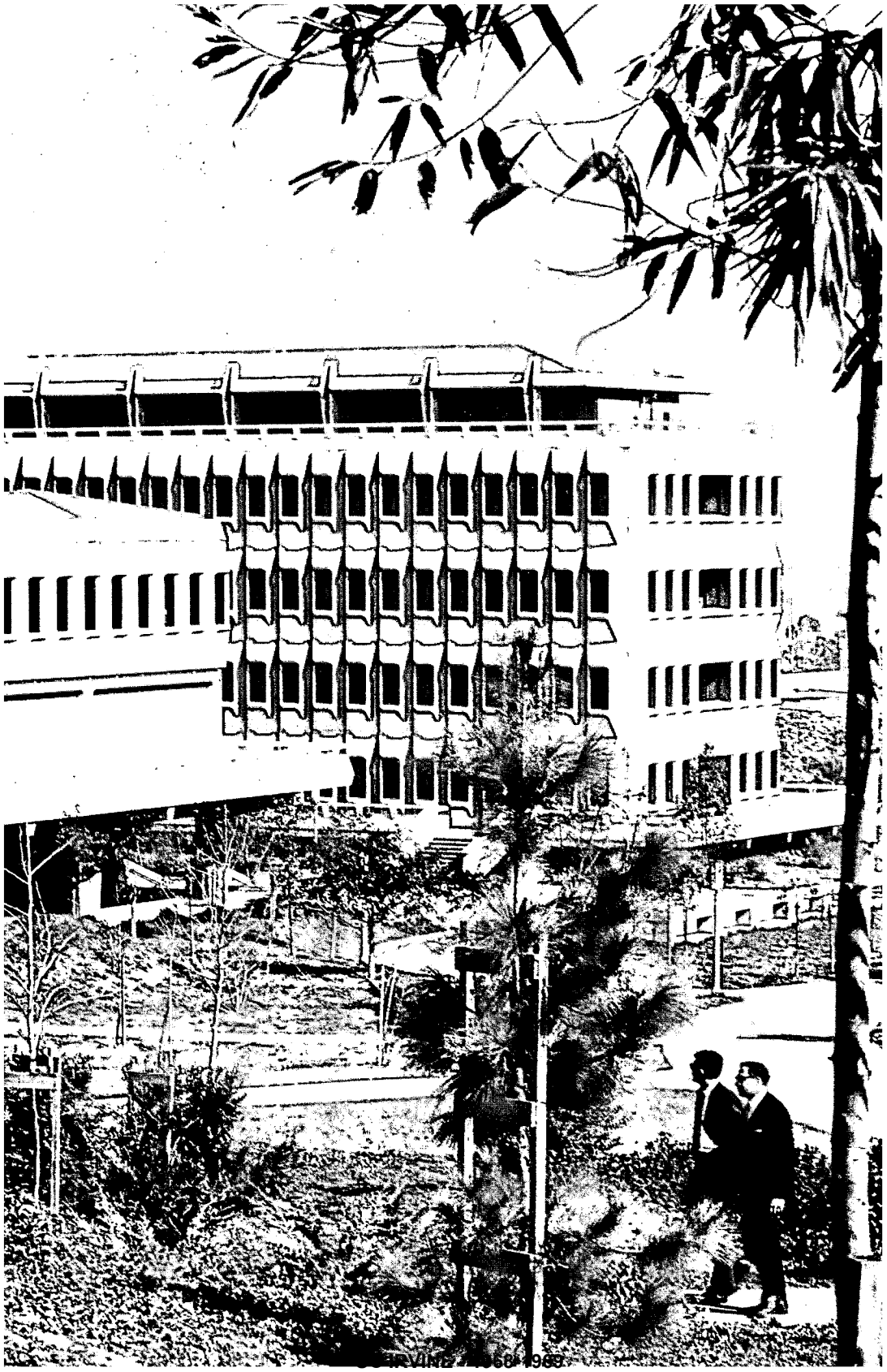
SENIOR FELLOWS

HAZARD ADAMS, *Professor of English (Chief Senior Fellow)*
MICHAEL COLE, *Associate Professor of Psychology*
KENNETH W. FORD, *Professor of Physics*
RALPH W. GERARD, *Professor of Biological Sciences*
ALEXEI A. MARADUDIN, *Professor of Physics*
ARTHUR J. MARDER, *Professor of History*
JAMES L. MCGAUGH, *Professor of Psychobiology*
ROLAND SCHINZINGER, *Assistant Professor of Electrical Engineering*
H. COLIN SLIM, *Associate Professor of Music*
GROVER C. STEPHENS, *Professor of Biological Sciences*

Undergraduate Courses

University Studies I, II, III (1-1-1)

An interdisciplinary course open to freshmen and sophomores who began the sequence in the freshman year. The nature of specific sections is described in the University Studies brochure. Completion of three quarters of the course may be used to fulfill in part the Irvine breadth requirement.



THE GRADUATE DIVISION

RALPH W. GERARD
Dean

Graduate study is a major aspect of the academic activity of the University of California, Irvine. Appropriate graduate degrees at the Master's and Doctor's levels, both those emphasizing the creative arts and creative scholarship and those emphasizing technical proficiency, are offered. The graduate student will be given full opportunity to further his development in a chosen discipline, by course and seminar work and by research and other creative work; to achieve excellence in such resources as English, foreign languages, mathematics, bibliography, and computer techniques; to develop some knowledge of the history of his broad area of interest; and to acquire some understanding of higher education in this country and some guided experience in teaching.

Admission to the Graduate Division is by the Graduate Dean on the advice of the department. A Bachelor's degree, or the equivalent, with adequate coverage and academic excellence, is a prerequisite. Students are invited to consult the department of interest for details on necessary background; deficiencies can sometimes be overcome by taking further specified undergraduate work. Requirements for good standing and for the award of a higher degree are those of the University of California as a whole, supplemented by specific requirements of the Graduate Division, the School, and the Department of specialization.

The Master's Degree

The M.A. or M.S. is normally attained by one of two routes: Plan I, a thesis; and Plan II, a comprehensive examination. Both require normally one year of residence on the campus, a foreign language as specified by the department, a certain number of courses maintained at a B average, and an appropriate demonstration of achievement. Plan I includes course work, a certain number of which must be at the graduate level, a thesis, and, usually, general examination in the particular field of study. Under Plan II, further course work replaces the thesis, and a more searching examination is administered. Opportunities for special preparation in teaching, as well as guided experience in actual teaching, will be offered by most departments. Other Master's degrees, awarded

for professional competence and often requiring more extended work, are also offered. School and departmental statements should be examined for details.

The Doctor of Philosophy

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

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 baccalaureate is normally required to complete the degree. During the first year or two of graduate work, the student is normally guided by a departmental advisor. When judged ready by the department, often aided by preparatory examinations, the student is encouraged to qualify for candidacy for the Doctor's degree. At this time, a committee is appointed by the Graduate Dean, which henceforth supervises his graduate program.

For information on admission to graduate status, see the section entitled *Admission to Graduate Status.*

ADMISSION TO GRADUATE STATUS

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

Application forms for admission to graduate status are available upon request from the OFFICE OF GRADUATE ADMISSIONS, University of California, Irvine, California 92664. For applicants residing in the United States, applications must be on file no later than July 1 for the fall quarter 1968, November 1 for winter quarter 1969, and January 1 for spring quarter 1969. Applicants interested in financial support should apply not later

than February 1, 1968 for the following year.

The Graduate Division requires TWO complete sets of official records covering all work attempted, together with official evidence of degrees conferred, from all institutions of college level attended, including any campus of the University of California, regardless of length of attendance. To be official, records must bear the Registrar's signature and the seal of the issuing institution, and be sent directly from the issuing institution. A summary of credit transferred and recorded on the transcript record issued by the institution granting the degree will not suffice, EXCEPT in the case of graduates of the University of California. IN THE ABSENCE OF OFFICIAL RECORDS AND OFFICIAL EVIDENCE OF GRADUATION OR DEGREE, REGISTRATION CANNOT BE PERMITTED.

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

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

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

For further information regarding the Graduate Division please refer to the *Graduate Division Announcement.*

EDUCATION OF TEACHERS

KENNETH P. BAILEY
Director of Teacher Training

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, curriculum construction, purposes and philosophy of education, 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 faculty assumes as one of its responsibilities the education of teachers for elementary and secondary schools and junior colleges. 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 Irvine for the Standard Teaching Credentials with a specialization in elementary teaching, with a specialization in secondary teaching, or for junior college teaching. The Standard Elementary Credential authorizes persons to teach in kindergarten and grades one through nine; the Standard Secondary Credential authorizes the teaching of subjects in the teaching major and teaching minor (not required) in grades seven through twelve, which actually means all grades of any senior high school, junior high school, or the seventh and eighth grades of an elementary school.

Requirements for either the Elementary or Secondary Credential are such that the Irvine student who completes the 3-3-6 college requirements will have completed most 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 sometime in his upper division experience, although such consultation is encouraged. The breadth of the Irvine graduation requirements simplify the credential requirements so that the only deviation from a regular B.A. degree might be the inclusion of a fourth course in English, and two or three

education courses during the junior or senior years. The student working for the Elementary Credential will also need to complete one course in the theory of the structure, arithmetic, and algebra of the real number system (Math 4A).

In addition to the regular credential program there is the possibility of enrolling in the Teacher Intern program. We suggest that students who are aiming at the Masters degree and the Intern program consult with the Office of Teacher Education.

A fifth year of college work taken in the Graduate Division is required for any teaching credential. For the Secondary Credential, during the graduate year the student must complete at least three courses either in his major or in his minor. While a minor is not required, it is advisable to develop one. The subject matter courses required in the graduate year must be graduate courses or courses accepted as graduate courses. For the Elementary Credential no specific 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 twelve units of Supervised Teaching. The sequence of education courses is flexible, but attention needs to be given to prerequisites.

Major requirement: All candidates must complete a major which consists of at least nine upper division and/or graduate courses. The major preferably should be one which is commonly taught at the school level for which the credential will be secured.

Minor requirement: Candidates with an academic major that is commonly taught in the public schools at the level for which the credential is to be secured need not complete a minor; however, Secondary Credential candidates in history, social sciences, and biological sciences may have difficulty securing a teaching position if they do not have a minor field.

If the major is academic, but not commonly taught at the public school level for which the credential will be secured, two minors that are commonly taught will be required. Each minor, for credential purposes, must consist of nine courses of lower and upper division. Approved interdepartmental minors are acceptable.

All faculty members will participate in teacher education, apprising themselves of the needs of elementary and secondary schools, planning curricula, and lending support to young men and women interested in teaching careers. Future teachers will be part

of the entire intellectual climate of UCI, studying with colleagues of like academic bent, who may or may not be planning to become teachers.

The University is fortunate to be surrounded by excellent schools that can provide an array of opportunities for students to observe and participate in educational affairs, and gifted personnel who will work side by side with University students. Master teachers in these schools will provide a clinical orientation through their supervision of student teachers and interns and participation in accompanying lectures, seminars, field trips, and workshops.

There are certain course requirements for the Standard Secondary Certificate. The student must take either History and Philosophy of Education (Ed. 170), or Sociological Foundations of Education (Ed. 172). He must take Psychological Foundations of Education (Ed. 171), Secondary Curriculum and Organization (Ed. 101), and Methods of Teaching in the Secondary School (Ed. 102).

The Standard Elementary Credential has five specific professional requirements plus supervised teaching. The student may choose either History and Philosophy of Education, or Sociological Foundations of Education. He is required to take Psychological Foundations of Education. He must complete both parts of Elementary School Curriculum, Organization and Methods (Ed. 104A-B), and 105A Reading.

These unrelated items may answer a number of questions. The students will find that the normal 3-3-6 requirement of the various colleges will fulfill the general education requirements of the Standard Secondary Credential and normally those of the Standard Elementary Credential. A student may not use more than two courses from the Extension Division to fulfill the credential requirement, if it is to be obtained through the University. The State Department of Education will not accept pass-fail grades in professional Education courses. For the Secondary Credential the three graduate courses in subject matter may be in either the major or minor, but not mixed. Both the Elementary and Secondary Credentials are graduate programs and require admission to the Graduate Division with the same grade point average as required of other academic areas. Persons interested in interning must complete at least one course in student teaching before entering the program.

Courses of Study

Educ. 101 *Secondary School Curriculum and Organization* (1) winter
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.

Educ. 102 *Methods of Teaching in the Secondary School* (1) spring
A laboratory course covering scope and sequence in instructional programs 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, film strips, overhead presentations, television, the computer, and other educational technology. *This course is to be* taken in the graduate year immediately prior to supervised teaching.

Educ. 102A *Methods of Teaching Foreign Languages in the Secondary Schools*
Prerequisite: Linguistics 100 and senior standing as a Foreign Language major.

Educ. 103 *Mathematics for the Elementary Credential* (1)
Structure, arithmetic and algebra of the real number system; elementary number theory and numeration.

Educ. 104A-B *Elementary School Curriculum, Organization and Methods:*
104A A laboratory course covering scope and sequence in elementary education, including current developments and methods in the mandated areas which most elementary teachers are required to teach: reading, language, literature, social science, mathematics, science, health, art, music and physical education. Students are required to observe and participate a minimum of two hours per week in selected public elementary schools. This course includes audio-visual materials and techniques and other educational media. In the first quarter

there will be detailed laboratory study of methods in developmental reading, language arts, and social science.

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

Educ. 105A *Curriculum and Methods in the Elementary School:* Reading.
Principles and methods of developing instructional programs in reading: participation in schools.

Educ. 105B *Curriculum and Methods in the Elementary School:* Foreign Language.
The audio-lingual method of teaching foreign languages at the elementary level. Examination and development of materials; evaluation; articulation with secondary schools.

Educ. 170 *History and Philosophy of Education*
Either Educ. 170 — History and Philosophy of Education, or Educ. 172 — Sociological Foundations of Education, should normally be the first education course in which the student enrolls. Course covers the development of educational thought with special reference to philosophical analysis.

Educ. 171 *Psychological Foundations of Education*
Covers the learning process in school situations, the evaluation of learning, application of psychological principles to problems of learning and development. Major topics include learning, personality development, social interaction, and theories of instruction, educational meas-

urement and evaluation, construction and interpretation of evaluation procedures.

Educ. 172 *Sociological Foundations of Education*
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 in schools of the United States; the school system as formal organization in American society.

Educ. 180 *Special Topics: Curriculum and Methods.*

Educ. 199 *Individual Study: History and Philosophy.*

Educ. 300A-B-C *Supervised Teaching in the Elementary School*
Must include 180 clock hours of actual teaching in a course in student teaching.

Educ. 320A-B-C *Supervised Teaching in the Secondary School*
Must include 120 clock hours of actual teaching in a course in student teaching.

UC IRVINE - 1968-1969

UC IRVINE - 1968-1969

THE GRADUATE SCHOOL OF ADMINISTRATION

GEORGE W. BROWN
Dean

The Graduate School of Administration offers programs of advanced study leading to the M.S. or Ph.D. degree in Administration. Through these programs individuals may prepare for significant roles in business or industry, in education, and in government. Among others, these roles include corporate managers, program directors, federal executives, state and local officials, urban and regional planners, administrators for all levels of the educational 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. These considerations point clearly toward the need for a *general* professional and academic education that integrates the contributions of a variety of disciplines and perspectives toward handling these common administrative problems, whatever their specific organizational locale.

The kind of generalist who should emerge from this experience should also be a *specialist* in two respects: he should have a reasonably thorough grasp of typical organizational patterns in *one* of several institutional realms having its own particular conditions and problems; and he should be able to approach organizational phenomena and problems from the perspective of a particular discipline or interdisciplinary area or a set of technical tools or methods developed beyond minimal required competence.

The M.S. program is intended to increase the likelihood that future leaders will be able to communicate effectively and move easily from one kind of organizational unit to another, thereby

providing society with versatile managers and administrators. The Ph.D. program for the field of Administration has the usual academic and research objectives.

Full-Time Programs

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

EDUCATIONAL OBJECTIVES

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

Regardless of the content of particular courses, it is expected that all degree candidates will be exposed to, and have the ability to use, the following:

1. *General Knowledge: The Broad Context of Organizations and Management:* The mid-Twentieth Century (significant trends, conditions, and problems); history of science, scientific inquiry, and the philosophy of science; economic, political, and social analysis.
2. *Conceptual and Empirical Knowledge of Organizations:* Basic concepts of management; the structure and functions of organizations, including comparative analysis and inter-organizational relations; levels and units of decision-making; individual behavior and group norms; operating environments of organizations.

3. *Specific Knowledge of Particular Arenas of Administration:* Depth study of educational, governmental, or business-industrial organizations. (Sub-specialties; for example, the administration of scientific and research enterprises.)
4. *Mathematics and Statistics:* As tools of precise reasoning, as languages which will tend more and more to dominate professional and scholarly literature, and above all, as foundations for relevant quantitative methods.
5. *Technical Bases of Management:* Planning and decision processes; operations research; systems and policy analysis; budgeting and accounting techniques; personnel policies; techniques for measuring and affecting attitudes and behavior; computer technology and information sciences; research design and strategies.
6. *General Skills:* Political skills, effective management of interpersonal relations, leadership strategies and tactics, and competence in oral, graphic, and written expression.
7. *Professional Orientations:* Identification of factors, values, and policies which might bear on successful, responsible, and intellectually honest performance of organizational roles. Recognition of the administrator's potential contributions to society and of ethical and moral problems which arise from social research and the management of human enterprises.

Learning Experiences

The following are some of the major kinds of learning experiences that will be stressed: seminars; independent reading and tutorial relationships; self-instruction; faculty-student research partnerships; in-service training; use of computer technology; small group experiments; the case and comparative study methods; simulation; oral, graphic, and written expression; technical report writing; contact with practitioners; exercises in application of basic tools and techniques; teaching experience; and interdisciplinary team activity.

GENERAL REQUIREMENTS

Admission inquiries should be addressed to the Graduate Admissions Office of the UCI Graduate Division. In addition to the general University of California rules governing admission to graduate study, the Graduate School of Administration normally requires:

1. The Graduate Record Examination (verbal and quantitative parts).
2. Subject matter preparation:
   a. mathematics through calculus.
   b. elementary statistics.
   c. economics: one year of introductory study.
   d. psychology or sociology: one year of introductory study.
   e. political science: one year of introductory study.
3. A previously prepared paper (research report, essay, case study) which is indicative generally of the applicant's interests and capabilities.

NOTE: While some minor deficiencies in the above entrance requirements may not disqualify otherwise admissible applicants, the Graduate School of Administration expects such applicants to indicate the steps they would take to remove these deficiencies prior to the beginning of the Fall Quarter of their first year in residence. (Students with major deficiencies in these entrance requirements could be admitted for a period of one year as "Limited Status" students in order to devote full time to making up these deficiencies in appropriate undergraduate courses on campus. Those anticipating enrolling as Limited Status students should apply for admission to the Undergraduate Admissions Office. Subsequent admission to the graduate programs in the Graduate School of Administration would be dependent upon the quality of work undertaken as a Limited Status student.)

DEGREE PROGRAMS

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

The Master of Science In Administration

This program of study will normally take two full academic years, including, for most candidates, related work during either or both of the summers preceding the first and second years. Beyond the prescribed common first-year program, the second-

year continuing seminar in the areas of specialization, and the required Workshop in Administrative Problem-Solving (for first and second year students), electives may be chosen on the basis of an evaluation of the candidate's general preparation in terms of the objectives of a professional degree. It is also expected of M.S. candidates that they will engage in teaching experiences during some portion of their two-year program.

In addition to the two-year program for students who have already received a bachelor's degree from this University or another institution, outstanding UCI undergraduate students may enter a cooperative "three-two" program with the approval of the Graduate School of Administration and of the appropriate undergraduate unit, for example, School of Social Sciences, the School of Engineering or the Department of Information and Computer Science. Students in such a program will spend their first three years in the cooperating field, followed by two years in the Graduate School of Administration. Successful completion of requirements in this program leads to a Bachelor's degree in the cooperating field, usually after the fourth year, and a Master's degree in Administration after the fifth year. Students contemplating entering such a three-two program should contact the Graduate School of Administration prior to, or early in, the start of their junior year, for the purpose of program consultation.

The Doctor of Philosophy In Administration

Given the objectives and educational activities associated with the Ph.D. degree, it is likely that at least three and probably four years of approximately full-time effort will be required. Whether all of this time will be spent "in residence" in the technical sense will depend in part on the pattern of in-service training or field research, or both. Beyond the extensive preparation in core disciplines and areas of technical competence acquired in the Graduate School of Administration M.S. program (or satisfactorily equivalent preparation), the Ph.D. must qualify as a skilled researcher and complete a significant exercise demonstrating these skills.

Students whose ultimate degree objective is the Ph.D. in Administration will normally enroll in the M.S. program unless they have already completed a substantial amount of closely related graduate work. Admission to candidacy for the Ph.D. will be on the basis of a qualifying examination, normally not to be taken before the end of two years of full-time study.

THE FACULTY

GEORGE W. BROWN, *Dean of the Graduate School of Administration, Professor of Administration and Information and Computer Science*

LYMAN W. PORTER, *Associate Dean of the Graduate School of Administration, Professor of Administration and Psychology*

COLIN E. BELL, *Assistant Professor of Administration*

HENRY FAGIN, *Professor of Administration, Research Administrator in the Public Policy Research Organization*

JULIAN FELDMAN, *Professor of Psychology and Information and Computer Science*

GORDON J. FIELDING, *Assistant Professor of Geography and Administration*

ROBERT M. GORDON, *Lecturer in Administration, Director of Computer Facility and Information Service*

STEPAN KARAMARDIAN, *Assistant Professor of Administration and Mathematics*

MEI LIANG O. KATO, *Assistant Professor of Administration*

KENNETH L. KRAEMER, *Assistant Professor of Administration, Assistant Research Administrator in the Public Policy Research Organization*

JAMES G. MARCH, *Professor of Psychology and Sociology, Dean of the School of Social Sciences*

ALEXANDER M. MOOD, *Professor of Administration, Director of the Public Policy Research Organization*

RICHARD C. SNYDER, *Professor of Administration and Political Science*

FRED M. TONGE, *Professor of Administration and Information and Computer Science*

JOHN WALLACE, *Associate Professor of Administration and Psychology*

DAVID L. WOLFE, *Visiting Research Associate in Administration*

Courses of Study

First Year

ALL M.S. CANDIDATES

The first year of study has two fundamental aims: (1) to develop skills needed to select and use effectively the appropriate

means, methods and techniques for diagnosing and solving organizational problems; (2) to identify the significant concepts and phenomena associated with the study of complex organizations and to bring to bear the relevant contributions of the core disciplines or interdisciplinary sources on the analysis of organizations and the administrative process.

A. *Required*
   1. 200A, 200B, 200C *Foundations of Administration*
   2. 280A-B-C (Section 1) *Workshop in Administrative Problem-Solving*

B. *Electives*

Within the context created by prior preparation and the workload obligations of the required first year courses, students are encouraged to begin to intensify their study in a particular *discipline* (e.g., economics, psychology, mathematics, engineering, geography) or in a particular *cross-discipline field* (e.g., operations research, systems analysis, organizational behavior, regional planning). Students aiming toward the Ph.D. degree will need to begin to prepare themselves intensively in research design and methods, either through formal courses or collateral reading.

Second Year

The major emphases in the second year will be on the development of specialized knowledge relevant to particular institutions (i.e., educational, business or government organizations) and on achieving additional depth in a discipline or interdisciplinary area or specialized competence in the use of a particular set of technical tools and methods.

A. *Required*
   1. 210A, 210B, 210C *Continuing Seminar in Education, Business-Industry, or Government*
   2. 280 ABC (Section 1) *Workshop in Administrative Problem-Solving*
   3. *A seminar in one of the disciplines or a given interdisciplinary area.*

B. *Electives*

During the second year additional courses might be selected that would further the particular goals and interests of the individual student. These courses could be chosen from among seminars on Advanced Study in Special Topics (280

Series), Independent Reading and Research (299 Series), and Seminars in other Departments and Schools outside the Graduate School of Administration.

COURSE OFFERINGS

200A, 200B, 200C *Foundations of Administration*

(Credit equivalent of three courses per quarter.) This course consists of three sequences. Sequence I and II will each require approximately four hours weekly of formal meeting time, and Sequence III will require approximately two hours weekly.

Sequence I: Quantitative Methods for Administration

Topics covered in this Sequence include: statistical inference, operations research techniques, computer technology and information processing, and simulation and gaming.

Sequence II: Organization Theories and Models

This Sequence will focus on the description, analysis, and comparison of organizations, using points of view from such core disciplines as economics, political science, psychology, and sociology.

Topics covered in this Sequence include: environments of organizations; organizational goals and objectives; the structure of organizations; theories of management, leadership and motivation; decision-making and problem-solving; interpersonal relationships and group influences; and interorganizational relationships.

Sequence III: Administrative Technology

This Sequence will focus on administrative tools and techniques applied to such fundamental managerial activities as planning, organizing, staffing, budgeting, and coordinating.

Topics covered in this Sequence include: finance and accounting, manpower management, constituency analysis, operations management, policy analysis, decision processes, and information systems.

210A, 210B, 210C *Continuing Seminar in Education, Business-Industry, or Government*

(Credit equivalent of one course per quarter.) The Continuing Seminar will be divided into three sections, each led by one or more faculty members. The sections will be

devoted to an intensive exploration of a particular institutional area and its associated problems. Stress will be placed on a basic understanding of institutional policies, structures and processes, environmental challenges, and problems of growth and change. All three quarters of a particular section are required.

210 ABC, Section 1: *Educational Administration*
210 ABC, Section 2: *Business-Industrial Administration*
210 ABC, Section 3: *Public Administration*

280A, 280B, 280C (Section 1) *Workshop in Administrative Problem-Solving*

(Credit equivalent of one course per quarter.) This course provides an opportunity to exercise appropriate quantitative, behavioral, and technical skills in meeting and solving management problems from a variety of institutional situations. The Workshop is required of all M.S. students in the Graduate School of Administration, both in the first and second years.

1. 280A, 280B, 280C (Sections 2, 3 . . .): *Advanced Study in Special Topics*

   Each quarter a limited number of optional special topic seminars will be offered by the Graduate School of Administration faculty. These 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; Organizational Research; The Economics of Education; Dynamic Decision Processes; Optimization Methods.
2. 299A, 299B, 299C: *Independent Research and Reading* Supervised research and reading chosen on the basis of individual need. Variable credit.
3. Seminars in Departments or Schools outside of Graduate School of Administration. Students are encouraged to enroll in whatever courses will meet their special interests or requirements. Enrollment is usually subject to approval of the instructor involved.

CONTINUING EDUCATION

From time to time the Graduate School of Administration will provide opportunities for persons working in government, education, and business for advanced study in a variety of forms including short courses, symposia, post-doctoral fellowships, and sabbaticals. Some of these special programs are currently being offered by UCI Extension. (See Extension Bulletin.)

RESEARCH OPPORTUNITIES AND FACILITIES

Degree candidates have the opportunity of participating not only in research projects conducted by individual faculty members, but also in the activities of organized research units such as the Public Policy Research Organization. Access to the UCI Computer Facility, to the Self-Instructional Laboratory, and to experimental small group and simulation laboratories, will add to the reservoir of "research technologies" available to the future manager, administrator, teacher, or researcher.

UCI — CALIFORNIA COLLEGE OF MEDICINE

W. BALLENTINE HENLEY
Provost
WARREN L. BOSTICK
Dean

The UCI-California College of Medicine offers a four-year professional curriculum leading to the M.D. degree.

Under the direction of a medical and scientific faculty, the College offers its students the opportunity to develop essential skills in basic sciences and clinical medicine.

It is essential that those who enter into the study of medicine be individuals of intelligence and character who give promise of being a credit to themselves, the University and the medical profession.

The College is accredited by the Council on Medical Education and Hospitals of the American Medical Association and by the Association of American Medical Colleges.

HISTORY OF THE COLLEGE

The California College of Medicine was established in 1914 with the merger of two California educational institutions. It was incorporated into the University of California in 1965. On April 20, 1967 by action of The Regents of the University, the medical college became part of the Irvine campus. The college will be relocated to UCI in the fall of 1968.

Preliminary applications for the class entering in September 1969, with all transcripts of record and other necessary documents, must be filed between May 1, 1968 and October 31, 1968, with the Admissions Office, UCI-California College of Medicine, Irvine, Calif. 92664. Application forms and information may be obtained from that office.

For details on admissions, see the information beginning on page 211.

REQUIREMENTS FOR GRADUATION

Every candidate for the degree Doctor of Medicine must fulfill the following requirements:

1. He must have attained the age of twenty-one and be of good moral character.

2. He must have spent at least four academic years of study as a matriculated medical student, the last two of which must have been in residence at UCI College of Medicine.
3. He must have completed all the required courses of the college curriculum.
4. He must be free of indebtedness and other obligations to the College.
5. He must have been recommended for graduation by the Promotions Committee, the Faculty and the Dean of the College.

INTERNSHIPS

The California Business and Professions Code provides that before a physician and surgeon's certificate may be issued to practice in the State of California each applicant must show by evidence satisfactory to the California State Board of Medical Examiners that he has completed a year's internship in a hospital approved by the board.

WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION

UCI-California College of Medicine participates in the student exchange program of the Western Interstate Commission for Higher Education, under which qualified legal residents of western states without medical schools — Alaska, Arizona, Hawaii, Idaho, Montana, Nevada and Wyoming — are given a reduction of tuition and fees. To be eligible for this program, the student must apply to the WICHE certifying officers in his own state, who will send him the proper forms. State eligibility requirements vary, and the number of students included from each state depends on appropriations by the state legislature. For addresses of certifying officers, write to the Western Interstate Commission for Higher Education, University East Campus, Boulder, Colorado 80304.

INSTRUCTIONAL AND RESEARCH SERVICES

AGRICULTURE

Students who wish to major in one of the agricultural sciences and who plan to transfer in advanced standing to the College of Agricultural Sciences, Berkeley; the College of Agriculture, Davis; the School of Agricultural Sciences, Riverside; the School of Forestry, Berkeley; or the School of Veterinary Medicine, Davis, may complete most of the requirements for the first two years of their undergraduate work at Irvine, on any other general campus of the University, or at one of California's junior colleges.

Majors in the agricultural sciences offered on the campuses listed above include: plant and animal sciences, agricultural economics, soils and plant nutrition, irrigation sciences, forestry, food science, dietetics, nutrition, genetics, biology, education and international agricultural development, range management, veterinary medicine, biochemistry, agricultural business management, horticultural science, agricultural chemistry, entomology, plant pathology, and various specialties in the field of family and consumer sciences.

Students should consult the General Catalogue of the appropriate campus for detailed requirements in their field of interest, since not all majors are offered on each campus and variations in requirements exist among specific majors.

THE COMPUTER FACILITY

ROBERT M. GORDON, *Director of Computer Facilities, Lecturer in Information and Computer Sciences*

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

EDUCATION ABROAD PROGRAM

The Education Abroad Program offers opportunities to undergraduate students of the University of California to study in universities overseas, and serves also as a source of information on all types of educational exchange experiences. It is administered for the University by the Santa Barbara campus. Professor Seymour Menton of the Department of Foreign Languages and Literatures is the Irvine Campus Coordinator.

In 1968-69 the University will continue the operation of its study centers in Colombia, France, Germany, Hong Kong, Israel, Italy, Japan, Lebanon, Spain, Sweden, and the United Kingdom, and will open a new center in Mexico. The centers range in size from ten to one hundred students.

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

The participants will spend from nine to eleven months abroad, including a special orientation program, six or seven weeks of intensive language preparation, a full academic year in the university of their choice, and some vacation travel. The program in Mexico is for seniors planning to become teachers of Spanish, and it is held in two sessions during the fall and winter quarters or the spring and summer.

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

The Regents endeavor to bring this year abroad within the reach of all students, regardless of their financial resources.

Applications for 1969-70 should be in by January 10, 1969, with the exception of applications for the United Kingdom, which are due by November 15, 1968.

For further information write to the Education Abroad Program, 2108 South Hall, University of California, Santa Barbara, or contact the Department of Foreign Languages, 260 Humanities Building, University of California, Irvine.

INTERCOLLEGIATE ATHLETICS

In 1968-69, UCI will have representative teams in basketball, crew, golf, gymnastics, sailing, swimming, tennis and water polo. The program will be expanded as rapidly as facilities and finances permit. When sufficient student interest is demonstrated, a program of intercollegiate athletics for women will be offered in such sports as golf, tennis, and swimming. For information regarding present or future sports teams, inquiries may be made to the Director of Athletics, Campus Hall.

JOURNALISM

Students interested in careers in journalism should major in one of the regular disciplines and use electives to complete a suitable interdisciplinary program, including work in such fields as writing, literature, the social science of communication, information and communication science, and administration. For further information students should consult the Chairman of the Department of English and Comparative Literature or the Chairman of Academic Advising in the School of Social Sciences.

THE UNIVERSITY LIBRARY

JOHN E. SMITH, *University Librarian*

Over 220,000 volumes and current journals numbering over 4,000 titles are openly accessible to the user. The Library building is being expanded in the course of the year to double its capacity. The resultant displacement of services and the disturbances to the studious reader, so different from the Library's past and future ambience, should be considered a small price to pay for future resources and improved conditions in the years ahead.

Library services and procedures are described in the *Library Handbook*, which is available in the Library.

Daily shuttle service to the extensive UCLA Library is available to those in need of resources not yet available in the UCI Library.

Plans are in motion to institute computer-assisted procedures for many library operations.

PUBLIC POLICY RESEARCH ORGANIZATION

ALEXANDER M. MOOD, *Director*

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

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

Graduate assistantships will be available for qualified students who desire experience in policy research and analysis.

SUMMER PROGRAMS

Undergraduate students in good standing, wishing to attend a Summer Quarter may apply to the Berkeley, Los Angeles, or Santa Barbara campus as an Intercampus Visitor. Visitor privileges are limited to students intending to return to Irvine in the next regular quarter to complete degree requirements on this campus. All others should file a regular Intercampus Transfer Application. Both applications are available from the Office of the Registrar.

New students seeking admission to a Summer Quarter must file a regular undergraduate application and meet the regular admission requirements.

Summer Sessions are offered on the Los Angeles, Santa Barbara, Davis and Riverside campuses. Admission is open to all University students, high school graduates, and to qualified applicants over 20 years of age. Applications may be obtained from the Summer Sessions Office on each campus.

Information regarding Summer Session on the Irvine campus may be obtained from the Office of the Registrar.

UNIVERSITY EXTENSION

RICHARD N. BAISDEN, *Director*
HARLEY W. MOWRY, *Program Coordinator*
ALICE L. ANDERSON, *Program Coordinator*
GLENN L. ANDERSON, *Publications Manager*

By a variety of methods the University of California Extension makes the resources of the University available to individuals and organizations throughout the state. Its aims are the intellectual and cultural development of adults, the dissemination of new knowledge resulting from teaching and research within the University; continuing professional, scientific, and technical training; development of special educational programs for public and private organizations; and education in public affairs.

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

STUDENT AFFAIRS

OFFICE OF VICE-CHANCELLOR STUDENT AFFAIRS

The Office of Vice-Chancellor Student Affairs coordinates all student services provided by the University. These include admissions and registration, academic advising, financial aids, housing and food services, recreation and sports, relations with schools, special services, student activities, and student health services.

It is a function of the Office of the Vice-Chancellor Student Affairs to facilitate professor-student relationships, and to encourage the student to pursue productively both academic and extracurricular experiences.

In essence, the function of the Student Affairs Office is to assist students in planning their individual and collective activities. The early years at Irvine offer unusual opportunities to establish organizations, traditions, and a responsible student government.

ACADEMIC ADVISING

Each student is assigned an advisor and an academic dean. Students who express a preference are assigned an advisor from a particular school, and his dean is the dean of that school. Once assigned to an advisor and to a dean, the student remains with that advisor and in that school unless he requests reassignment (for example, if he changes his field of interest). The student is encouraged to consult his advisor — or any member of the faculty. He must see his advisor prior to registration. However, the advisor does not dictate. The student, not the advisor, is responsible for meeting requirements and remaining in good academic standing.

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

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

Advisors meet with their advisees individually during Orientation Week in the fall, and these meetings are repeated periodically during the academic year. A student may remain with the same advisor throughout his stay at Irvine. Changes are possible when:

1. The student or his advisor believes a change would be desirable.
2. The student transfers to another school or department (unless he prefers to remain with his original advisor).
3. The advisor is unavailable for an extended period of time.

Any changes of advisor will be arranged by the student's school dean. If the student wishes to change his school or departmental area of concentration, he must obtain a petition from the Registrar. Upon filing the petition with the Registrar, the required changes in his records will be made.

Students are encouraged to consult their advisor prior to each enrollment period, although they are not obligated to follow their advisor's recommendations. It is the student's responsibility to satisfy the academic regulations of this campus. The long-range objective of the advising system is to enable the student to assume a maximum amount of responsibility for his own academic program.

STUDENT AFFAIRS STAFF

ROBERT S. LAWRENCE, *Dean of Students*
JOHN W. BROWN, *Registrar and Admissions Officer*
MRS. BETTE ABS, *Coordinator of Financial Aids and Placement*
MRS. ELLENE J. SUMNER, *Coordinator of Food Services*
ROBERT HAYDEN, *Coordinator of Housing*
RAYMOND THORNTON, *Coordinator of Recreation Sports*
MISS JAN JENKINS, *Coordinator of Special Services*
JACK F. LITTLE, *Assistant to the Vice-Chancellor Student Affairs, for Co-Curricular Learning*
GERALD B. SINYKIN, M.D. *Director of Student Health Services*
JAMES E. DUNNING, *Assistant Director, Relations with Schools*

OFFICE OF THE DEAN OF STUDENTS

The Office of the Dean of Students coordinates services available to students and provides leadership and guidance in the co-curricular program. Services are provided in the following areas:

Financial Aids and Placement

Scholarships. Undergraduate scholarships are available for both entering and continuing students from funds donated by private sources and by The Regents. Awards are made on a competitive basis with consideration given to the applicant's scholastic achievement, financial need, and character. In most instances, the award will not meet the annual expenses of a full-time student. It is expected that each applicant will be able to draw upon other financial sources, such as savings, assistance from parents, loans and part-time employment.

Application forms and a descriptive circular may be obtained from the Office of Financial Aids and Placements, 1423 Library Building, University of California, Irvine, California 92664. Applications must be filed between December 1 and January 15, prior to the academic year for which the awards are to be made. For information concerning fellowships for graduate students, please refer to the Graduate Section of the Catalog.

Regents' Scholarships. A limited number of four-year and two-year scholarships are made available to outstanding entering freshmen and to continuing and transfer students beginning their junior year in the University. Recipients will be chosen for demonstrated academic excellence and exceptional promise. Each will receive $100 honorarium at the beginning of each academic year. Additional stipends to cover the full cost of required fees, board and room, books and supplies, and incidental expenses will be awarded, the amount to be based on individual financial need. Application requirements are the same as for other scholarships.

Loans. The Regents, various organizations, and philanthropic individuals have contributed funds toward the creation of several student loan funds. The money for this purpose is administered by the University in accordance with conditions stipulated by the donors and by the administrative regulations of The Regents. Loans from these funds are generally of a short-term nature and ordinarily do not bear interest. In addition, long-term student loans are available to qualified undergraduate and graduate students. Regularly enrolled students in good standing or applicants for admission to regular status are eligible to apply. Applicants must demonstrate clear evidence of financial need by submission of the Parents' Confidential Statement of the College Scholarship

Service. (This form may be obtained from the high school or junior college counselor.) Loan applications should be submitted by June 15 for funds to be available for the fall and winter quarters and by December 15 for funds to be available for the spring quarter.

Part-Time Student Employment. Students wishing assistance in obtaining part-time employment during the academic year and summer vacation period may register with the Office of Financial Aids and Placements any time during the year. Both on- and off-campus jobs are available on an hourly basis in the fields of typing, clerical help, sales, care of children, housework, manual labor, tutoring, and some specialized kinds of work for qualified students. A listing is also available for board and room in exchange for work in private homes.

Federal Educational Opportunity Grants. The basic purpose of this program is to assist students whose exceptional financial need would prevent their attending college. Grants range from $200 to $800 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. Grants are renewable if financial need continues and good standing is maintained.

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

Career Placement. Candidates for a degree are invited to register with the Office of Financial Aids and Placements as early as possible during their last year in school. They will be assisted in obtaining information concerning employment opportunities; and arrangements will be made for them to meet with employers from business, industry and government for on- and off-campus interviews.

Educational Placement. Prospective teachers who are interrested in positions in public or private schools, colleges or universities, including administrative, supervisory and research positions, are encouraged to register with the Office of Financial Aids and Placements. A personal confidential file will be assembled including background, training and profes-

sional experience of applicants, in order to match candidates with available positions. Interviews will be arranged and qualified candidates will be recommended to employers.

Food Services

This office supervises all food service on campus and handles arrangements for special luncheons, dinners and dances, conferences, institutes and special sessions. In addition, this office supervises Mesa Court Association finances. The Food Services Office is located on the first floor of the Library Administration Building.

Housing

The University maintains on-campus residences for 800 undergraduate single students in Mesa Court. Each residence accommodates 50 or 60 students and a resident assistant, providing an opportunity for small-group living, self-government, and leadership experience. Each residence is divided into suites of four or five double rooms, with living room and bath; and each also contains a lounge, recreation room, and library. Mesa Court Commons provides food service for all students in Mesa Court. Rooms are furnished except for bedspreads, blankets, and study lamps. The residences close during the Christmas and spring recesses, although special arrangements may be made for housing during these periods.

The University has 200 one-, two-, and three-bedroom apartments on campus. Most of these apartments are furnished and all have carpeting, draperies, stoves, and refrigerators. The apartments are rented to married graduate and undergraduate students, single graduates, a few single undergraduates, faculty, and staff.

Off-campus room and apartment listings are available to students who desire to 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. Students who live in campus residence and apartments must have a signed housing contract and deposit on file with the Housing Office.

Recreation Sports

The Recreation Sports Program provides a variety of physical activities for officially enrolled UCI students. The major activities include men's intramural sports, women's intramural sports, coed intramurals, physical recreation, and sports clubs. The Coordinator of Recreation Sports is responsible for all recreational sports activities which utilize the physical education department's facilities and equipment. Faculty coordinators are responsible for various segments of the total program. Student supervisors, under the leadership of faculty coordinators, supervise and conduct the daily sports competition. The *Recreation Sports Handbook* is available to every new student at enrollment. Detailed information can be obtained in the Physical Education Department Office, Campus Hall.

Special Services

The Office of Special Services administers the various Federal, G-I Bill and State Veterans' educational assistance programs; maintains liaison between the individual male students and their Selective Service System boards; acts in an advisory capacity to foreign students; and assists the physically handicapped with registration and enrollment procedures and other matters of need. Students with particular problems in these and related areas are urged to contact this office, Room 1415, Library Administration Building.

Student Activities

The Student Activities Office, located on the first floor of the Commons, is the coordinating center for student organizations and their activities. The Activities Office staff also acts as advisors to student government as well as to students who are interested in existing campus programs or in initiating new projects.

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

STUDENT AFFAIRS DEVELOPMENT

The Office of Student Affairs Development is concerned with fostering a general sense of community on the campus. Toward this end, its staff works informally to facilitate communication and collaboration between and among the various university components. The office serves as a general enabling resource in connection particularly with those student activities having an educative or developmental potential, especially innovative projects that seem to offer promise of enriching the total university community.

A unique role of this office is its student advocate or "ombudsman" function. This function enables areas of student concern to gain sufficient recognition that effective courses of personal or social action can be instituted.

STUDENT HEALTH SERVICES

Among the services available to all regular enrolled students on the UCI Campus is a Health Service under the direction of a physician-director. An outpatient dispensary is staffed by registered nurses, laboratory and x-ray technicians. Local physicians will provide all needed outpatient daytime care, including diagnosis, treatment, immunization and medical consultation. The dispensary has a clinical medical laboratory, diagnostic x-ray department, physical therapy and a pharmacy. Medical specialty clinics are scheduled regularly, and appointments with the appropriate specialists will be arranged as required. A small but complete infirmary is maintained within the Student Health Service. When hospitalization or surgery, beyond the level provided within the Student Health Service, is required, it may be carried out in nearby hospital facilities. Thus, hospitalization and surgery, as well as other additional health care benefits are provided to all enrolled students by an insurance program which covers all registered students who have paid an incidental fee.

Clinical counseling and help is available through the Mental Health Division of Student Health. Psychiatrists and psychologists provide a full spectrum of services to the students.

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

STUDENT CONDUCT AND DISCIPLINE

A student enrolling in the University assumes an obligation to conduct himself in a manner compatible with the University's function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of the Dean of Students. Particular attention is called to the booklet *University of California Policies Relating to Students and Student Organizations, Use of University Facilities, and Non-Discrimination* and to the Standard of Conduct set forth therein.

ADMISSIONS

ADMISSION OF UNDERGRADUATES

Undergraduate admission requirements are uniform on all campuses of the University. Admission to the University entitles the student to attend the campus of his choice if facilities are available. Applications will be processed and acted upon in only one Office of Admissions. Duplicate applications should not be filed. Detailed information regarding procedures on change of campus preference after an application has been filed is included in the Undergraduate Admissions Circular.

Undergraduate students are classified as *Regular*, *Limited*, *Special*, or *Accelerated High School* Students. *Regular* students are degree candidates enrolled in the established curriculum of a school. *Regular* students are expected to carry a minimum of three courses each quarter. Students in *Limited* status are those with or without a Bachelor's degree who have completed a substantial amount of college work and who wish to undertake certain undergraduate courses in the University toward a definite and limited objective. Students in *Special* status are those over 21, who have not had the opportunity to complete a high school program or who have not completed a substantial amount of college work but who by reason of special attainments may be prepared to undertake certain undergraduate courses in the University. No *Limited* or *Special* student may be a degree candidate. (See section on the admission of *Limited* and *Special* students.) *Accelerated High School* students are high school seniors recommended by their high schools to enroll in a limited University course concurrent with their final year of high school.

Application —

Application packets, including all the necessary forms and instructions,* are available from the Office of Admissions. The filing periods are as follows:

Fall Quarter	October 1 - March 1
Winter Quarter	May 1 - November 1
Spring Quarter	August 1 - February 1

* NOTE: The twenty days allowed for filing the application is not valid beyond the final date of the filing period.

Application Fee —

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

Transcripts of Record —

Each applicant is responsible for requesting the graduating high school and each college attended to send official transcripts of record directly to the Office of Admissions. Those applying as entering freshmen should ask the high school to submit preliminary transcripts showing their complete record through the sixth semester and listing courses in progress. In every case, a final transcript including a statement of graduation will be necessary. Applicants for advanced standing should submit preliminary transcripts of all college or university work attempted to date, in addition to the high school record. All preliminary transcripts should include a statement of the work in progress. Final transcripts should show evidence of good standing or honorable dismissal.

Notice of Admission or Deferral —

The length of time required for evaluation of an application and its accompanying transcripts of record varies. Frequently eligibility cannot be determined until the final term's work is completed. In such cases, the applicant may expect to receive a preliminary statement indicating the status of his application. The University participates in the Early Decision program wherein Freshmen applicants for the Fall quarter whose eligibility can be determined early will receive Notice of Admission beginning January 15. Such students have until the Candidates Reply Date to return their Statement of Intention to Register (SIR). Fall applicants admitted after the Candidates Reply Date and applicants for admission to the Winter and Spring quarters have three weeks after receiving the Notice of Admission in which to return the SIR. The $50.00 Advance Deposit on the Registration Fee is non-refundable but will be applied to the full Registration Fee when the student registers. The Notice of Deferral is accompanied by the Statement of Deficiencies which lists the reasons for the deferral.

Reapplication —

An applicant who is not admitted, or who does not enroll for the quarter to which he is admitted, must reapply if he seeks

admission to a subsequent quarter. Transcripts of records on file will be retained for six quarters.

ADMISSION TO FRESHMAN STANDING

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

Freshman Requirements for California Residents

(See page 205 for Rules Regarding Residency Determination.)

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

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

Subject Requirements

(The "a to f" sequence.)

a. History, 1 unit — This must consist of 1 unit of United States History, or ½ unit of United States History and ½ unit of American Government.

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* The 1968-69 CEEB Scholastic Aptitude and Achievement tests will be given on the following dates: Nov. 2, Dec. 7, 1968; Jan. 11, Mar. 1, May 3, Jul. 12, 1969. Arrangements to take the tests should be made with Educational Testing Service, P.O. Box 1025, Berkeley, California, 94710; or P.O. Box 592, Princeton, N.J. 08540.

b. English, 3 units — These must consist of three units of English composition, literature, and oral expression.
c. Mathematics, 2 units — These must consist of two units of subjects such as elementary algebra, geometry, trigonometry, calculus, elementary functions, matrix algebra, probability, statistics, or courses combining these topics. Arithmetic and such non-academic subjects as shop mathematics and business mathematics are excluded.
d. Laboratory Science, 1 unit — This must consist of an eleventh or twelfth grade year course in one laboratory science. Both semesters must be in the same subject field.
e. Foreign Language, 2 units — These must be in one language. Any foreign language with a written literature is acceptable.
f. Advanced Course, 1 (or 2) unit(s) — This must be chosen from the following: Mathematics, a total of 1 unit of second year algebra, solid geometry, trigonometry, or other certified advanced courses; Foreign Language, either 1 additional unit in the same foreign language offered under "e" or 2 units of another foreign language; Science, 1 unit of either chemistry or physics in addition to the science offered under "d".

Electives

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

Admission by Examination

The freshman applicant who is not eligible on the basis of his high school record and who has completed no college or university work may qualify for admission by examination. Acceptable scores of the tests given by the College Entrance Examination Board, taken after the completion of the first half of the eleventh grade, may qualify a candidate for admission. See the Undergraduate Admissions Circular for additional details.

Freshman Requirements for Non-California Residents

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

4) submit the following test scores from the College Entrance Examination Board:

a. Scholastic Aptitude Test—Verbal and Mathematics
b. Achievement Tests—English, Social Science/Foreign Language, Science/Mathematics.

Admission by Examination — Non-Residents

The non-California resident who is not eligible on the basis of the high school record and who has completed no college or university work may qualify for admission by examination. Scores of the tests given by the College Entrance Examination Board, taken after the completion of the first half of the eleventh grade, may qualify a candidate for admission. See the Undergraduate Admissions Circular for details.

ADMISSION TO ADVANCED STANDING

Advanced Standing Requirements for California Residents

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

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

Advanced Standing Requirements for Non-California Residents

In addition to the regular advanced standing requirements

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

Transfer Credit

4-Year Institutions—The University grants unit credit for courses consistent with its curriculum that have been completed in colleges or universities accredited by appropriate accrediting agencies.

California Junior Colleges—As an integral part of the system of public education of California, the University accepts at full value approved transfer courses completed with satisfactory grades in public junior colleges of the state.

Limitation of transfer credit from junior college—Frequently, students who intend to complete their advanced studies at the University will find it to their advantage to complete the first two years of their college course in one of the many excellent California public junior colleges. However, after a student has earned 70 semester hours (105 quarter hours) of course work acceptable toward the degree, no further credit will be granted by the University for courses completed at a junior college.

University of California Extension—Courses bearing numbers prefixed by X, XB, XD, XI, XL, XR, XSB, XSC, and XSD yield credit toward the Bachelor's degree, and are rated on the same basis as courses taken in residence at any accredited collegiate institution. The decision regarding the acceptability of extension courses taken at an institution other than the University rests with the Office of Admissions. The decision regarding the applicability of such course work in satisfaction of degree requirements rests with the faculty of the particular school in which the student plans to enroll.

Satisfaction of Breadth Requirements through transfer credit—Students who transfer from a four-year institution and who have met the general breadth requirements of that institution will be considered to have met the school requirements 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 will be considered to have met the school requirements of UCI. Students who, upon transfer, have not completed these

breadth requirements, may elect to complete those in progress at the institution from which they transfer or those at UCI.

Course equivalencies of transfer credit—Students transferring to UCI with advanced standing credit from an institution on the semester system may, in general, determine the course equivalency of their transfer work as it applies to the breadth requirement by equating two courses at the semester institution with three courses at UCI.

Unit equivalencies of transfer credit—Students transferring to UCI with advanced standing credit from an institution on the semester system may determine the unit equivalence of their transfer work as it applies toward admission and towards the degree by equating one unit at the semester institution with 1½ units at UCI.

Advanced Placement Examinations—Advanced Placement credit of 10 quarter units will be granted by the Office of Admissions for examinations completed during the eleventh or twelfth year of high school, where the composite score is 3, 4, or 5. Advanced placement may be granted by the Dean of the School in which the student enrolls.

ADMISSION TO LIMITED OR SPECIAL STATUS

The *Limited or Special* student is enrolled for a specified period of time determined at the time of admission. The applicant who seeks eventual admission to regular status in a professional school is enrolled in that school, or in the appropriate undergraduate school. He may be admitted only upon the approval of the Dean of the school. The Dean of the school is responsible for the specified program of courses and for the maintenance of an academic record which may be specified when the program is approved. Any deviation from the planned program or any scholarship deficiency incurred while pursuing it will result in the cancellation of the student's *Limited or Special* status and will render him subject to dismissal. No student will be admitted to *Limited or Special* status for the purpose of raising a grade point average to qualify for admission to the University as either a regular Undergraduate or as a Graduate.

NOTE: Students with no specific degree plans or goals are encouraged to enroll in courses through University Extension.

ADMISSION FOR A SECOND BACCALAUREATE DEGREE

Admission as a candidate for a second Baccaulaureate Degree

is normally discouraged. However, the University recognizes that complete changes in objective may occur which necessitate a second undergraduate degree. Applicants must be fully eligible to the University and their record must indicate strong probability of academic success in the new area. Admission is subject to the approval of the Dean of the school in which work will be taken, and the Admissions Officer.

ADMISSION OF FOREIGN STUDENTS

Application —

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

English Proficiency —

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

Language Credit —

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

Foreign Student Advisor —

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

ADDITIONAL POLICIES RELATING TO ADMISSIONS

Rules Regarding Residency Determination

Legal residency is a combination of actual physical presence in the state and demonstrable intention to make California the permanent home. New and returning students must complete a Statement of Legal Residence of the time of registration. Resident status is determined by the Attorney in Residence Matters. Where incorrect classification as a resident is the result of a deliberate falsification or concealment of facts, the student will be subject to University discipline and will be legally liable for non-resident fees which would have been assessed if the residency classification had been correct initially. Each student is responsible for making sure he is at all times properly classified as a resident or non-resident of California. If he is in doubt about his status and seeks clarification he should correspond with the Attorney in Residence Matters, 590 University Hall, Berkeley, California 94720.

Medical and Physical Examinations

New students and students returning to the University after an absence of two or more quarters are required to have a health clearance by the Student Health Service before their enrollment is completed. All new students are required to have a completed medical history and physical 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 curriculum, students may be required to have additional examination and supplemental immunization which will be performed by the Student Health Service.

REGISTRATION AND ENROLLMENT; PROCEDURES AND REGULATIONS

New and reentering students receive instructions regarding registration with their Notice of Admission or in a separate mailing. The dates of the start of each quarter are listed in the calendar on page 4 of the catalogue. The official schedule of classes is available prior to registration each quarter. Registration is not final and official until all steps have been completed, including the payment of fees. Each student is responsible for the courses in

which he is enrolled each quarter. Consult the Student Academic Handbook for additional details regarding registration and enrollment.

Courses and Credits

A student's workload is stated in terms of courses. Since emphasis at Irvine is upon the acquisition of competence, knowledge, intellectual integrity, and creative power rather than on the taking of formal course work, fulfillment of a requirement stated in terms of courses could be construed to mean acquisition of the abilities equivalent to those ordinarily acquired in a formal course. A regular undergraduate student is required to carry a minimum of three courses each quarter, unless an exception is approved by the Dean of his school.

Credit by Examination

A regularly 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 on a passed/not passed basis. Some are offered on a letter grade basis.

Passed/Not Passed Option

In order to encourage students to venture into courses where they might otherwise hesitate because of uncertainty regarding their aptitude or preparation students are allowed to enroll in certain courses in areas beyond their own area of concentration on a passed/not passed basis. A decision to so enroll must be made at the beginning of the course and cannot be altered. A student who fails such a course will receive a grade of NP, although the failure will not be counted in his grade point average. A student who makes a grade of C or better will have the grade recorded as P, will receive credit, but the grade will not be counted in his grade point average. A student in good standing may take an average of one course each quarter on the passed/not passed basis. A student enrolled in each of twelve quarters may take a maximum of twelve passed/not passed courses. Similarly, a transfer student with six quarters in residence may take no more than six courses on a passed/not passed basis.

Grading and Scholarship Requirements

The quality of scholarship is reported in one of the following grades: A, excellent; B, good; C, fair; D, barely passing; F, not

passing; I (incomplete), undetermined: P (see section on passed/not passed option), pass. Other symbols which may be used in recording a student's work are: NR, no record, J6, indicating a two or three quarter course in which no final grade is assigned until the end of the year. Grade points are assigned as follows: A-4, B-3, C-2, D-1, F-0, Incomplete-0, P-0. Letter grades, A to F, are final when filed by the instructor on the course report at the end of the quarter. The grade of Incomplete assigned when the student's work is incomplete because of circumstances beyond his control will be converted to a letter grade when the student has completed the required course work. An incomplete grade must be converted before the end of the student's next quarter in residence.

Duplication of Credit

If a student is permitted to repeat a course or take another course which is considered a duplication, it is the responsibility of the student to notify the Registrar's office during the first two weeks of the quarter in which the work is being repeated so that the proper deduction may be made in his total hours of credit. The registrar's office cannot be responsible for notifying students of loss of credit by duplication until such time as the student files his application for a degree. His record is carefully checked at that time and loss and credit due to duplication of work will be reflected on the summary sheet sent to him.

Probation

A student will be placed on probation if his overall grade point average falls below 2.0 at the end of any quarter. A student may also be placed on probation if he fails to make reasonable progress toward a degree. Under most circumstances a full-time student should meet all degree requirements within twelve quarters of college-level work. A student will be removed from probation if he achieves an overall grade point average of 2.0 at the end of his next quarter of attendance.

Dismissal

A student whose grade point average falls below 1.5 for any quarter or who after one quarter on probation has not achieved a grade point average of 2.0 is subject to dismissal. A student will be allowed to continue, on probation, if his record indicates that he is likely to achieve the required scholastic standing within a reasonable time. A student may also be dismissed for failure to make

reasonable progress toward a degree. Ordinarily no student will be dismissed for academic reasons until he has completed three quarters of work at the University. However, a student whose academic deficiencies are serious and whose record indicates that he has failed to apply himself toward the correction of those deficiencies may be dismissed at the end of any quarter. Students who are dismissed may apply for readmission, subject to the approval of the Dean of their school.

Readmission

All students who are enrolled for any quarter or portion of a quarter, and are then absent from the campus for a quarter or more, must apply for readmission. The readmission of students who are dismissed for any reason, or whose withdrawal was conditional in any way, will require the approval of the Dean of their School.

Intercampus Transfer

An undergraduate student who is registered on any campus of the University, or who was previously registered in any regular session of the University and has not since been registered at another institution, may apply for transfer to another campus of the University by filing the appropriate forms on the campus where he was last registered in regular session. The Intercampus Transfer application form and an application for transcripts of record may be obtained from the Office of the Registrar and must be filed within the stated periods for filing applications.

Degree Requirements

See the section on *The Academic Plan* for a detailed statement on University requirements, as well as School, Department and Interdepartmental Requirements.

FEES AND EXPENSES

Exact figures regarding student expenses at the Irvine campus of the University of California are difficult to predict. Costs will vary according to personal tastes and the financial resources of the individual student. Some expenses are common to all students; some are optional and will vary considerably.

University Registration Fee

The University Registration Fee is $100.00 per quarter, for both graduate and undergraduate students. 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 registration and graduation, for all 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 $50.00 advance deposit on the Registration fee is applied to the full fee when the student registers. The registration fee is subject to change by action of the Regents of the University of California.

Associated Students Activities Fee

In the fall 1966 the student body voted to establish a $7.00 activity fee per quarter to be used by the ASUCI to provide social activities, lectures, forums, concerts, and other activities at either a reduced charge, or no charge, to UCI students. The fee is collected by the University for the Associated Students during registration each quarter. This fee is non-refundable after the beginning of Orientation Week or after the first day of class instruction during quarters when there is no Orientation Week.

Parking Fee

A fee of $2.00 per month is assessed for the parking of cars on campus.

Non-Resident Tuition

Tuition is free to every student who has been a legal resident of the State of California for a period of one year immediately preceding the opening day of the quarter for which he seeks to enroll. Every student who has not been a legal resident for this period is classified as a nonresident and is assessed a nonresident tuition of $400.00 per quarter, payable at registration. (See Rules Regarding Residency Determination, page 205.)

Subject A Fees

A fee of $5.00 is paid by all students taking the Subject A Writing Sample prior to enrollment. A fee of $45.00 is paid by all students enrolling in the Subject A course.

Miscellaneous Fees and Expenses

A schedule of miscellaneous fees and other information pertaining to expenses is available from the Cashier. All fees are subject to revision by the Regents of the University of California.

Average Annual Expenses

The following is intended only as a guide in computing the average annual expenses for three quarters of attendance.

University Registration Fee	$ 300.00
Associated Students Fee	21.00
Room and Board in University Residence Halls (20 meals per week)	1006.00
Books and Supplies	150.00
Personal Expenses (laundry, clothing, recreation, transportation and miscellany)	454.00
Average Annual Expenses (California resident)	$1931.00
Nonresident Tuition	1200.00
Average Annual Expenses (non-California resident)	$3131.00

OFFICE OF RELATIONS WITH SCHOOLS

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

ADMISSION TO UCI - CALIFORNIA COLLEGE OF MEDICINE

All inquiries should be addressed to:
UCI-California College of Medicine
Irvine, Calif. 92664
(714) 833-5011

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

Women are admitted to the College on the same basis as men.

First-year students are admitted only in September of each year.

A student formerly enrolled in the College may be required, before readmission, to pass examinations in the subjects previously completed.

Candidates for admission to the first-year class in the College must meet in full the requirements specified below.

1. The candidate must have completed a four-year high school course, or its equivalent, acceptable for matriculation 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 a satisfactory scholarship record 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 baccalaureate credit in an accredited institution of higher learning. Candidates for admission may submit junior college credit only to the extent granted on transfer to a four-year college or university. The following *minimum* specified subjects of premedical work are offered as a guide to the candidate:

	Semester Units		Semester Units
Chemistry (total)	16	English Composition	6
General Chemistry		Biology (total)	12
Quantitative Analysis		General Zoology	
Organic Chemistry		Vertebrate Embryology	
Physics (total)	8		

The courses listed above 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 comparative anatomy of the vertebrates, genetics and mathematics will give the medical student a stronger foundation on which to build. Undergraduate courses in medical college subjects should be avoided. The premedical student should recognize that a broad education is desirable, and that the study of English is of particular importance, because clear communication is the foundation of all science. The applicant should direct to the Admissions Office any question he may have regarding the acceptability of a course.

3. The candidate must attain a satisfactory score in the Medical College Admissions Test. The score report for this test must be in the Admissions Office of the College before acceptance may be granted. Inquiries regarding this test should be addressed to the Medical College Admission Test, The Psychological Corporation, 304 East 45th St., New York 17, N.Y.
4. A personal interview with members of an Interview Committee is usually required of the candidate after preliminary consideration of the application for admission. Those selected for interview will be notified of the date. Those candidates who live a considerable distance from the College may be interviewed by someone designated by the Director of Admissions. An interview does not guarantee admission.

METHOD OF MAKING APPLICATION

A preliminary application must be submitted by October 31 of the year preceding that for which matriculation is desired. Candidates for admission should file with the Admissions Office of the College the following:

1. A completed preliminary application.
2. Two (2) glossy, unmounted photographs, exactly 2″ x 2″, taken within sixty (60) days preceding the date of the application.

The candidate is responsible for having the scores of the Medical College Admissions Test sent to the Admissions Office of the College. DO NOT send any other documents with the preliminary application.

After the preliminary application has been evaluated, the applicant MAY be asked to file with the Admissions Office of the College, the following:

1. A completed Application for Admission, including the blue supplemental sheet and a Course List.
2. An evaluation fee of $10.00, which is not refundable.

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

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

No application for admission will be accepted which does not clearly indicate that all the required subjects will be completed by the date of matriculation.

SELECTION OF CANDIDATES

The fulfillment of scholastic entrance requirements and the ability to pay tuition and other fees do not of themselves constitute a right to study medicine. This privilege is sought by many more applicants than educational facilities can accommodate. The privilege is, by action of the Admissions Board, granted to those who possess, in addition to scholarship, other attributes important in the physician. Those who are selected still have to demonstrate, year by year throughout the course, their ability and worthiness of 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 from that school and a letter of honorable dismissal from that school.

RECOMMENDED ACCEPTANCE PROCEDURES OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

For the information of prospective medical students and their advisors, the recommended procedures governing medical school acceptance offers and student response to these offers are printed below. These procedures have been approved by the Executive Council of the AAMC upon recommendation of the Committee on Research and Education. Both applicants and schools share responsibility for abiding by their spirit.

1. No offer of admission to medical school should be made to an applicant more than one year before he will enter the course of instruction offered by the medical school.*
2. When an offer is made to an applicant, he should have not less than two weeks in which to make his reply.
3. Prior to January 1, the student receiving an offer may be required to file within two weeks a statement of intent, or a deposit, or both. The statement of intent should leave the student free to withdraw if he is accepted by a school he prefers; and the deposit, which should not exceed $100, should be refundable without question if the request for refund is made before January 15.
4. Offers made after January 1 may require a reply within two weeks, and also a deposit, not in excess of $100, which may be credited against tuition charges if the student matriculates in the school, and which may be forfeited if he does not.
5. Each medical school should prepare and distribute to applicants and college advisors a detailed schedule of its application and acceptance procedures, and should adhere to this schedule unless it is publicly amended.
6. No medical school should use any device which implies that acceptance of its offer creates a moral obligation to matriculate at that school. Every accepted applicant should know that he is free to deal with other schools and accept an offer from one of them even if he has paid a deposit to another school and must forfeit it. Every accepted applicant does retain under all circumstances an obligation to notify a school promptly if he decides not to accept its offer to him, and to withdraw at once if, after accepting an offer from a school, he receives and accepts an offer from another school he prefers.
7. Each school is free to make appropriate rules for dealing with accepted candidates who hold one or more places in other schools without adequate explanation. These rules should recognize the problems of the student who has multiple offers, and also of those applicants who have not yet been accepted.

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* Under special circumstances a school may make an offer more than one year before the expected matriculation date to encourage the educational development of the student, but all such offers should state explicitly that the student is completely free to apply to other schools at the usual time.

THE UNIVERSITY

THE UNIVERSITY ADMINISTRATION

The organization and government of the University is entrusted under the State Constitution, to a corporate body, The Regents of the University of California. The Board of Regents is composed of twenty-four members, sixteen appointed by the Governor of California for sixteen-year terms and eight who are members because of the offices they hold. These *ex officio* members are the Governor, the Lieutenant-Governor, the Speaker of the Assembly, the President of the State Board of Agriculture, the President of the Mechanics' Institute, the President of the Alumni Association, the State Superintendent of Public Instruction, and the President of the University. The Regents have "full powers of organization and government, subject only to such legislative controls as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds."

The President of the University is the executive head of the University in all its departments and on all its campuses. He is appointed by The Regents and is directly responsible to them.

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

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

A Brief History

The promise of a University of California is contained in the State's Constitution, drafted in Monterey in the gold rush year of 1849. California was admitted to the Union the following year,

but almost twenty years were to pass before the hope for a public university was realized.

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

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

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

The University Today

From its beginning in Berkeley, the University of California has grown to include eight additional campuses at 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.

Under contract with the Atomic Energy Commission, the University operates two off-campus installations for atomic research: one at Livermore, a component of the Lawrence Radiation Laboratory, and the other, the Los Alamos Scientific Laboratory, at Los Alamos, New Mexico. Other major research installations are located at Mount Hamilton (the Lick Observatory), White Mountain (high altitude research), Hat Creek (radio astronomy research), Bodega Bay (marine laboratory), Oakland (Naval Biological Laboratory), and Richmond (engineering and forest products research). Among nearly two dozen other principal field and research stations are: Antelope Valley Field Station, Los Angeles County; Blodgett Forest, El Dorado County; Philip Boyd Desert Research Center, Riverside County; Deciduous Fruit Field

Station, Santa Clara County; Frances Simes Hastings Natural History Reservation, Monterey County; Hopland Field Station, Mendocino County; and Kearney Horticultural Field Station, Fresno County.

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

The student enrollment is expected to surpass 100,000 by 1969. Nearly 85 percent of all students are residents of California. The remainder come from other states of the nation and from about 100 foreign countries.

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

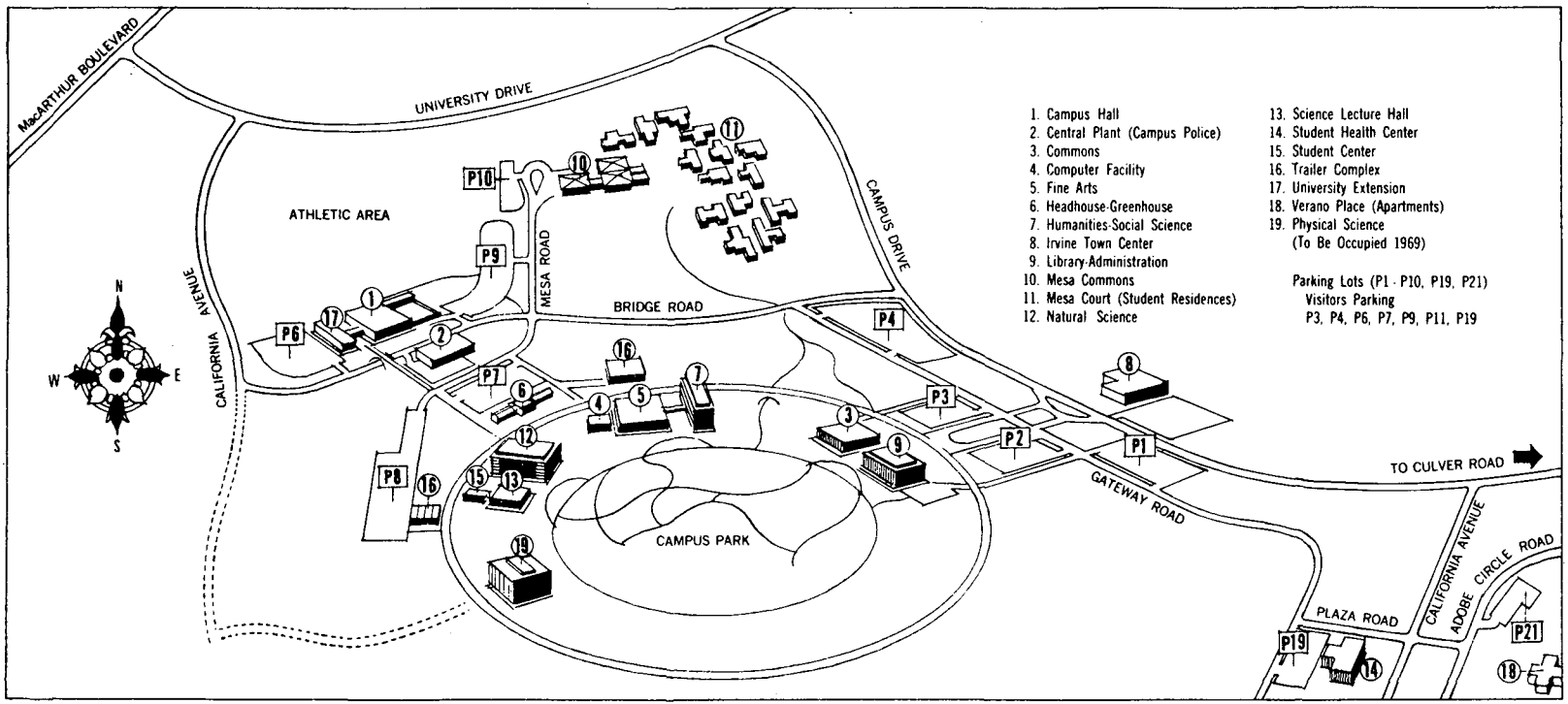
The University performs many services in addition to its campus programs of instruction. It is the primary state-supported academic agency for research. Its public services include medical and dental clinics, information services for agriculture, and a broad program of continuing education for adults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

THE IRVINE CAMPUS

The history of the Irvine campus began early in the 1950's when the University's Board of Regents concluded from enrollment and population projections that a new campus would be needed in the Orange County area. A gift of 1,000 acres of Irvine Ranch land was accepted by the Regents and the deed was recorded January 29, 1961. The Regents purchased an additional 510 acres from the Irvine Company in January 1964 to provide for future campus housing and ancillary services.

Single ownership of the surrounding lands presented an unusual opportunity for coordinated planning for urban development of the western portion of the 88,000-acre ranch and the University community. This was achieved by retention of the architectural and planning firm of William L. Pereira and Associates for master planning of the campus and community. Irvine lies at the heart of a rapidly developing metropolitan area with an

UCI - CAMPUS GUIDE

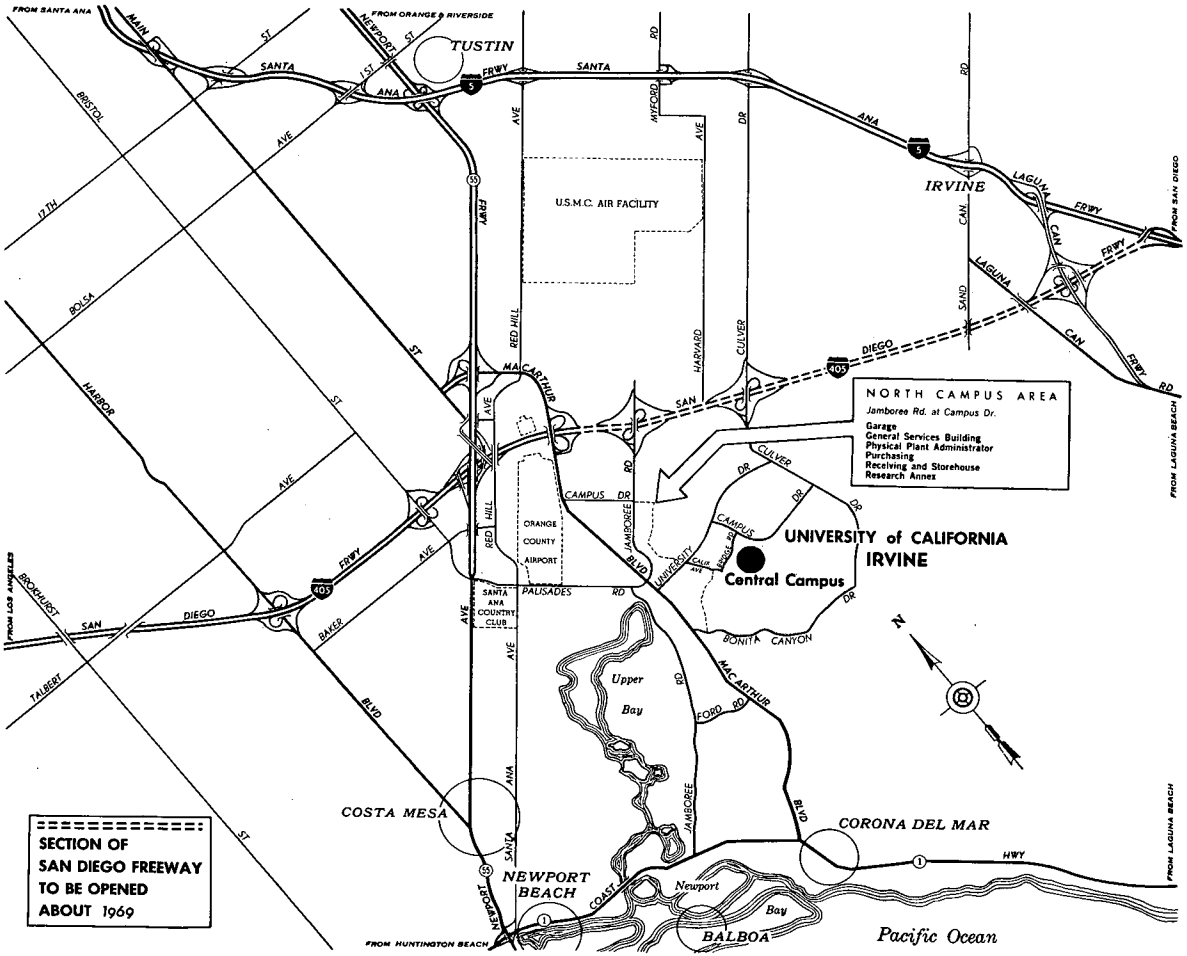


estimated two million population within a 20-mile radius, including parts of southern Los Angeles County, northern San Diego County and Orange County. The campus is about three miles from the Pacific Ocean and the city of Newport Beach and is connected by a modern freeway system to the city of Los Angeles, about 40 miles to the north.

Classes first opened in October 1965 with 1,589 students, freshmen through post-doctoral. Enrollment increased to 2,800 for 1967-68 and is projected to grow annually until 27,500 is reached about 1990. The major buildings are the Library-Administration, Commons, Humanities-Social Science, Fine Arts, Natural Science, Science Lecture Hall, Campus Hall (gymnasium-auditorium), Student Health Center, Central (utilities) Plant, a complex of 15 residence halls and dining facilities at Mesa Court for 800 single students; and 200 apartment units for married students and staff at Verano Place.

The Physical Sciences Building is scheduled for occupancy early in 1969. Interim buildings for the move of the UCI-California College of Medicine to the Irvine campus will be completed in 1968 and 1969. To be completed later in 1969 are two School of Engineering buildings, a Fine Arts Village complex, and additions to the Library and Central Plant. A building for the School of Social Sciences, an administration building, a second Biological Sciences building, a permanent Medical Sciences building and additional residence halls and apartments are planned for completion in the early 1970's.

For further information about the Irvine campus communicate with the Public Affairs 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 the support organizations: The Friends of UCI, Friends of the UCI Library, University Gallery Associates, UCI Town and Gown, Big I Boosters, The UCI Foundation, the UCI Industrial Associates, and the UCI Alumni Association.



UC IRVINE - 1968-1969

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