UNIVERSITY OF CALIFORNIA, IRVINE
1966-67 CATALOGUE

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When we in the University of California decided a few years ago that we must build three entirely new major campuses, not only simultaneously but expeditiously, we also decided that each of these new campuses for the 21st century should be different—different from one another and different from the existing campuses of the University. We took for our motto "unity with diversity," but sought to place the emphasis on diversity.

We asked each new campus to try to articulate new answers to problems of today. We challenged each to face the demands and shape the opportunities of the future with an individual style—whether in instructional methods, in research emphasis, in academic structure, in campus architecture, in student participation.

CLARK KERR

President of the University

In grasping this chance to pioneer in education—in forging a unique UC/I brand within the University of California—Irvine administrators, professors and students have significantly widened the choice of educational experience open to Californians. The University of California as a whole is thereby enabled to make a fuller and more varied contribution to the state and to the nation in these exciting years when education for all is termed the first work of our time, and when higher education becomes steadily more central an influence in the lives of individuals and of society.

The 1966-67 catalogue is in large measure a testimony to the achievements of faculty and students of the Irvine campus during its first year of existence.

On the morning of October 4, 1965, the charter faculty and students entered classrooms and laboratories and breathed life into an institution which had until then been only in the making. In the ensuing busy days curricular and extracurricular programs gave new identity to the campus.

The academic hallmarks of Irvine are the divisional structure of the College of Arts, Letters, and Science; freedom for students to develop individual programs of study with the counsel of outstanding faculty; pass-fail options; the opportunity to achieve credit by examination; and an array of self-instructional devices that provide opportunities for independent study.

DANIEL G. ALDRICH, JR.

Chancellor

Several major goals set for the first year have been reached or surpassed: The library has grown rapidly both in respect to the number of volumes it contains and the number of services it can provide; numerous student activities have been established; University Extension has begun to offer a broad program; the community has been involved in many cultural and recreational activities.

On the pages that follow you will find details of programs and activities and information about life at Irvine during 1966-67.

CALENDAR 1966/1967

FALL QUARTER/1966

Fall Quarter Begins	September 26
Orientation Week Activities	September 26-30
Registration and Enrollment in Classes	September 26-30
Instruction Begins	October 3
Thanksgiving Vacation	November 24-25
Instruction Ends	December 10
Examinations Begin	December 12
Fall Quarter Ends	December 17

WINTER QUARTER/1967

Winter Quarter Begins	January 3
Registration and Enrollment in Classes	January 3-4
Instruction Begins	January 5
Lincoln's Birthday—Holiday	February 13
Instruction Ends	March 11
Examinations Begin	March 13
Winter Quarter Ends	March 18

SPRING QUARTER/1967

Spring Quarter Begins	March 27
Registration and Enrollment in Classes	March 27-28
Instruction Begins	March 29
Memorial Day—Holiday	May 30
Instruction Ends	June 6
Examinations Begin	June 7
Spring Quarter Ends	June 13

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UC IRVINE - 1966-1967

1 THE ACADEMIC PLAN

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.

The College of Arts, Letters, and Science

The College is composed of the Divisions of Biological Sciences, Fine Arts, Humanities, Social Sciences, and Physical Sciences. Programs of the College are designed to develop the qualities long associated with a liberally educated man. In keeping with the assumption that breadth as well as depth deserves to be emphasized, the College faculty will direct students toward scholarly proficiency, concentrated study in some specific area of human understanding, and the experience of more than a single discipline. The faculty assumes that, for many students, a liberal education is the best professional preparation, especially for those who anticipate careers requiring advanced, professional, or graduate study. Students will be able to undertake studies preparing them for graduate work in biological sciences, physical sciences, fine arts, humanities, or social sciences. Students may also prepare for admission to professional schools such as law, medicine, dentistry, engineering, journalism, business administration, nursing, agriculture, or veterinary medicine; or for careers in many aspects of business, teaching, or public affairs.

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, of the College, and of the division and department or interdepartmental program to which he belongs.

The requirements for the baccalaureate are as follows:

UNIVERSITY REQUIREMENTS/

1. ENGLISH:
   A score of at least 600 on the College Entrance Examination Board Achievement Test in English,
   OR passage of the "Subject A" examination given by the University,
   OR successful completion of the noncredit course in English composition (Subject A), for which a fee of $45.00 is charged,
   OR successful completion of equivalent course work elsewhere.
2. AMERICAN HISTORY AND INSTITUTIONS:
   Passage of an examination in the subject,
   OR presentation of a certificate of completion of the requirement at another California institution.

COLLEGE REQUIREMENTS/

1. Three courses in each of two divisions other than the division of concentration and six courses in a third division other than the division of concentration.

2. Credit for 45 courses, earned by examination, by other evaluation, or by 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.

DIVISIONAL, 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 five Divisions of the College, having made certain that he has the background and preparation necessary to accomplish junior and senior work in that Division. Each Division specifies graduation requirements in addition to those specified by the University and the College. Prerequisites for work in each Division and the departmental and divisional graduation requirements are listed below:

- THE DIVISION OF BIOLOGICAL SCIENCES/One year of introductory biology; *Biological Sciences* 101, 102, 103, 104, 105, 106; one year of college-level physics; mathematics through differential and integral calculus; chemistry through organic chemistry.

- THE DIVISION OF FINE ARTS/*Art:* One course in the nature of art; one year's work in visual fundamentals; one year's work in the history and theory of art; six junior-senior studio courses, including one studio tutorial; five junior-senior courses in the history and criticism of art; three courses in fine arts outside of the departmental major; and a senior comprehensive examination or a one-man final exhibit.

  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 at least two performances a year.

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

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 chairmen 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 DIVISION OF HUMANITIES / *Divisional Requirements: English* 5, 10, 15 or the equivalent; competence equivalent to two years of college work in a single foreign language; three courses in history; two courses in philosophy.

Departmental Requirements:

Comparative Literature: Sufficient competence in a foreign language, either modern or classical, 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 ten literature courses beyond Freshman English, of which eight must be at the junior-senior level. Formally these will include *English* 100, *Comparative Literature* 189, and appropriate study in English and American literature, literature in foreign languages, and special courses in Comparative Literature as recommended by the student's advisor. Through consultation with the advisor, election of an area of concentration consisting of a foreign language and literature, either ancient or

modern, for examination at the time of his senior comprehensive examination. Passing performance in the senior comprehensive examination in Comparative Literature, details of which may be obtained from the Comparative Literature committee.

English: English 100 (taken twice) plus about seven courses in English or drama, of which five should be at the junior-senior level (for those emphasizing the art of writing program, eight courses in English, including writing, as advised); one course in a foreign literature where texts are read in the original language; *English* 189 (the senior seminar) or *Wr* 125 (the senior workshop in writing); the senior comprehensive examination in literary history.

Foreign Languages and Literatures: 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.

History: One year of general European History, normally 10A-10B-10C; one year of American History, normally 50A-50B-50C; one year of Asian History; one course in historiography; five courses in history on the junior-senior level; the senior seminar in history; the senior comprehensive examination in history.

Philosophy: History of Philosophy 20, 21, 22 and six junior-senior courses including metaphysics and epistemology.

■ THE DIVISION OF PHYSICAL SCIENCES / *Divisional Requirements:* 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.

Departmental Requirements:

Chemistry: One year of general chemistry and ten more advanced courses, including *Chemistry* 51C, 131C, and 151 or the equivalent; 12 courses in mathematics, physics, or the biological sciences, including: a) at least one year of calculus; and b) one year of college-level physics for which calculus is either a prerequisite or a corequisite. (The *Physics* 3 sequence does not meet this requirement.)

Mathematics: Nine courses of junior-senior level mathematics.

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 DIVISION OF SOCIAL SCIENCES/Divisional requirements 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 three clusters of work:

  Freshman-Sophomore Work: Social Sciences 1A, 1B, 1C, and three courses chosen from the following: *Anthropology* 1, *Economics* 1, *Geography* 1, *Political Science* 1, *Psychology* 1, *and Sociology* 1.

  Junior-Senior Work: Satisfactory performance on the junior examination (a three-course sequence in the field of concentration—the 110A-100B-100C sequence—is the normal method of preparation) and two senior research papers in the area of concentration (a three-course sequence—the 190A-190B-190C sequence—is the normal method of preparation).

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

Proficiency in English & Foreign Languages

There are no College requirements in English composition for all students at UCI (though it is required by some divisions), 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 College requirements in foreign languages for all students at UCI (though it is required by some divisions), but the ability to read French, German, or Russian 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. Furthermore, mastery of a foreign language is in itself an important goal.

Credit & Scholarship

COURSES AND CREDIT: The amount of a student's work is judged in terms of courses. However, since emphasis at Irvine is upon the acquisition of competence, knowledge, intellectual integrity, and creative power rather than the taking of formal course work, fulfillment of a requirement stated in terms of courses should be construed to mean acquisition of the abilities equivalent to those ordinarily acquired in a formal course. Credit for many courses may be obtained by examination. For a list of such courses in each Division the student should consult the office of the Dean. Transfer students may, in general, determine the equivalence of work done elsewhere by equating one course at UCI with four quarter units of credit, and by considering three courses at UCI equivalent, in respect to credit, to two courses at an institution which operates on the semester system.

ADVANCED PLACEMENT AND PROFICIENCY EXAMINATIONS: Except for certain studio, seminar, and other such special experiences, students may obtain credit for most courses by special examination. At the time of admission to the University, advanced standing credit will be given for passage with a grade of 5, 4, or 3 of a College Entrance Board Advanced Placement Test. Advanced Placement Test credit may be used to fulfill requirements of the College of Arts, Letters, and Science.

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 College requirements at UCI. Students who transfer from a junior college and have met the general breadth requirements of any campus of the University of California, will be considered to have met the College requirements at 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.

SCHOLARSHIP GRADES: Quality of scholarship is reported in one of the following scholarship grades: A, excellent; B, good; C, fair; D, barely passing; F, not passing; I (incomplete), undetermined; P (see below), pass. Grade points are assigned as follows: A = 4, B = 3, C = 2, D = 1, F = 0, Incomplete = none, P = none. All grades except Incomplete are final when filed by an instructor on his course report at the end of the quarter. The grade of Incomplete may be assigned when a student's work is incomplete because of circumstances beyond his control. To replace this

grade a student must undertake an examination equivalent to the final examination, or must complete some required assignment, but not the entire course. When this grade is thus converted to a passing grade, the student receives course credit and appropriate grade points. An incomplete grade must be made up before the end of the student's next quarter in residence.

THE PASS-FAIL OPTION: In order to encourage students to venture into courses when they might otherwise hesitate because they are uncertain about their aptitude or preparation, students are allowed to enroll in certain courses, principally in areas beyond their own area of concentration, on a pass-fail basis. A decision so to enroll must be made at the beginning of the course and cannot be altered. A student who fails such a course will have the failure recorded, and it will be counted as would a failure in any other course. A student who makes a grade of D or better will have the grade recorded as P. He will receive credit, but the grade will not be included in determining his academic average. A student in good standing is authorized to undertake one course each term on the average on a *Passed* or *Not Passed* basis. This means that a student enrolled in each of twelve quarters may take a maximum of twelve Pass-Fails. Transfer students, accordingly, with only six quarters in residence, may take not more than six courses on a Pass-Fail basis.

PROBATION: A student will be placed on probation if at the end of any quarter his grade point average is less than a C. 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. The basis for the removal of a student from probation is a 2.0 grade point average based on all work taken at the University.

DISMISSAL: The faculty or its designated agents and the advisor will carefully review the total academic record of 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. A student will be dismissed if his record indicates that he will not meet the required scholastic standing (a C average) within a reasonable time. 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 so grave and whose record indicates that he has failed to apply himself toward the correction of these deficiencies may be dismissed at the end of any quarter.

NORMAL PROGRAM: A student normally carries four courses each quarter. He may carry three. If he wishes to carry fewer than three or more than five, he will need the permission of his advisor.

Advisor & Dean

Each student will be assigned an advisor and an academic dean. Students who express a preference will be assigned an advisor from a particular division, and his dean will be the dean of that division. Once assigned to an advisor and to a dean, the student will remain with that advisor and in that division 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 division to which a student is assigned has authority over the student's academic program. A student who wishes to drop or add a course, seeks a waiver of a graduation requirement, or has other questions relating to his academic progress, should see the dean of the division 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 College of Arts, Letters, and Science.

THE FACULTY

EDWARD A. STEINHAUS, *Professor and Dean of Biological Sciences*

MOLECULAR AND CELL BIOLOGY

JOHN J. HOLLAND, *Professor of Microbiology and Chairman of the Department*

GALE M. GRANGER, *Assistant Professor of Microbiology*

LELAND H. HARTWELL, *Assistant Professor of Biochemistry*

CALVIN S. MCLAUGHLIN, *Assistant Professor of Biochemistry*

WENDELL M. STANLEY, *Assistant Professor of Biochemistry*

CLIFFORD A. WOOLFOLK, *Assistant Professor of Microbiology*

DANIEL L. WULFF, *Assistant Professor of Biochemistry*

ORGANISMIC BIOLOGY

GROVER C. STEPHENS, *Professor of Biological Sciences and Chairman of the Department*

JOSEPH ARDITTI, *Assistant Professor of Biological Sciences*

RICHARD D. CAMPBELL, *Assistant Professor of Biological Sciences*

RALPH W. GERARD, *Professor of Biological Sciences, Dean of the Graduate Division, and Director of Special Studies*

PATRICK HEALEY, *Assistant Professor of Biological Sciences*

DONALD R. KAPLAN, *Assistant Professor of Biological Sciences*

STUARD M. KRASSNER, *Assistant Professor of Biological Sciences*

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THE DIVISION OF BIOLOGICAL SCIENCES

The Division of Biological Sciences reflects the "new 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 traditional administrative rigidity has been relaxed in order to maintain continuing interaction between classroom education and research, between departments and individuals. The curriculum, both undergraduate and graduate, is characterized by the greatest flexibility in meeting the present needs not only of the biology major but also of students in other disciplines.

The major in biological sciences should have some understanding of the tremendous impact biology is now exerting upon matters of public policy and society in general and the importance of society's reaction to these discoveries. He should, therefore, avail himself of the broad opportunities allowed by the curriculum to study in other divisions of the College. By the same token, students in other disciplines should realize that a knowledge of the basic principles of the life sciences is necessary for a proper understanding 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.

The rapid increase, turnover, and overlapping of information in the biological sciences since mid-century make it futile to define distinctly a specific body of biological knowledge. For this reason, and because of the current revolution in the organization and realignment of the numerous biological sciences, UCI's pedagogical approach and departmental organization recognizes several levels of biology and those well-established themes which give biology its pattern, texture, and unifying concepts. The levels include molecules, subcellular organelles, cells, tissues, organs, organ systems, organisms, populations, communities, ecosystems,

POPULATION AND ENVIRONMENTAL BIOLOGY

ARTHUR S. BOUGHEY, *Professor of Biological Sciences and Chairman of the Department*

PETER R. ATSATT, *Assistant Professor of Biological Sciences*

GILBERT W. BANE, *Assistant Professor of Biological Sciences*

KEITH E. JUSTICE, *Assistant Professor of Biological Sciences*

ROBERT H. WHITAKER, *Professor of Biological Sciences*

PSYCHOBIOLOGY

JAMES L. MCGAUGH, *Professor of Psychology and Chairman of the Department*

PAUL G. SHINKMAN, *Assistant Professor of Psychobiology*

MARCEL VERZEANO, *Professor of Psychobiology*

NORMAN M. WEINBERGER, *Assistant Professor of Psychobiology*

RICHARD E. WHALEN, *Assistant Professor of Psychobiology*

and the biosphere. They are reflected in the Division's departmental organization: Molecular and Cell Biology, Organismic Biology, Population and Environmental Biology, and, in addition to these, the Department of Psychobiology, which is concerned with the biological significance and bases of behavior. Psychobiology is set apart primarily to give it an integrity of its own and to distinguish it from social and clinical psychology. The themes weaving through these "levels" include evolution and genetic continuity, regulation and homeostasis adaptations, complementarity of structure and function, complementarity of organism and environment, and others. These themes unify the levels and areas of biology—in the past all too rigidly separated and grouped according to whether their subject matter was animal, plant, or microbial.

Undergraduate Program

Both the major and nonmajor should consider biology as an integrated whole. Neither student should be subjected to beginning courses in each of the numerous branches or subdivisions of biology. Instead, he should gain a solid overview of unifying concepts. This is doubly important in the case of the biology major who intends later to specialize in a particular area or branch of biology. The Division offers a three-year core of courses for all biology students, regardless of subsequent graduate specialization, whether it be in biological sciences, teaching, medicine, agriculture, or some other field. The Division is vitally concerned that its offerings be readily available to students in any and all disciplines. The first year of the core is designed with the nonmajor, as well as the major, in mind, and every effort is made to make biology meaningful to the student majoring in another discipline.

At the undergraduate level there is a minimum of departmentalization. The core courses are taught by teams of instructors from the several departments, each dealing with an area of his particular skill and interest, with no attempt to delimit instruction artificially on the basis of a particular instructor's special interest. The introductory course is taught by a cadre of at least four instructors representing the four departmental areas. The biology major begins study with the same introductory year of courses (1A-1B-1C) as that taken by the nonmajor. (The nonmajor may take courses 1A-1B-1C at any time; the major usually takes them in his sophomore year.) Any one of the three quarters of the introductory year, or all three quarters, may be omitted if the student can pass an appropriate comprehensive examination. The major should begin as soon as possible to fulfill his requirements in the physical sciences and mathematics. He should carefully select and begin to complete his requirements in the other divisions.

The core curriculum continues in the junior year in a progressive spiral fashion from molecular biology and biochemistry through cell biology; tissue, organ, and organismic biology; psychobiology; population, community, and environmental biology. The courses are characterized by a sequential ordering of content with greater emphasis on the unity—and less on the diversity—among living organisms than has been the case in the past. While the core curriculum is administered by the Division with the cooperation of the several departments, undergraduate special subject-matter courses (primarily on the junior-senior level), service courses, or other satellite courses may be offered and administered by the various departments.

TRANSFER STUDENTS: Students who transfer to the Division from other accredited institutions will be given credit for the work they have done elsewhere. Wherever they have the opportunity, students intending to transfer are advised to elect the more broadly based biological courses and to postpone specialization within biology until their junior and senior years.

MEDICINE AND DENTISTRY/PREPROFESSIONAL TRAINING: A student who plans to enter a school of medicine or dentistry may receive his required preprofessional training on the Irvine campus. This preprofessional training may be accomplished by (a) completing the professional major (i.e., the core curriculum) in biological sciences, or (b) majoring in any division or department but fulfilling concurrently the specific course requirements of the medical or dental school he expects to attend. A few schools request specific additional requirements; *a student should, therefore, check early with the professional school he seeks to enter.*

More than 90 percent of the students admitted to medical schools in the United States have attained the A.B. 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 medical and dental 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 medical or dental school plan to obtain a Bachelor's degree. Rather than require their students to have taken specific premedical courses, many medical and dental schools now prefer that their students come to them having the type of training in the biological sciences (with prerequisites in physical sciences, social sciences, and humanities) offered at Irvine.

NECESSARY COMPETENCE: 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 whatever formal instruction is necessary to improve. 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 is essential.

For students who wish to specialize in molecular biology, courses in physical chemistry are desirable.

Graduate Programs

Graduate instruction is under the immediate jurisdiction of the several departments in the Division. (See curriculum of each department for course listings.) The student selects one of these departments in which to major, but he may take courses in any one or all of the departments and confer freely with any professor in any department.

Scholarship requirements for students entering the graduate program in Biological Sciences at UCI conform to those established by the Graduate Council of the Academic Senate and to those of the University in general. Approval by the staff members of the department concerned, following careful review of the grades, letters of recommendation, and other qualifications of the applicant, is also required.

A two-man committee is assigned to each student upon entrance. This committee, in consultation with the student, will outline a program of study. In the course of the first two years, the student will seek out his area of interest and commence some research activity. The staff member with whom the research is being done will join the committee and assume the major responsibility for further guidance. He will take on the role of the student's prospective major professor.

At the appropriate time, the student's formal doctoral committee will assume guidance for the remainder of the work.

THE MASTER OF ARTS IN BIOLOGICAL SCIENCES

PLAN I: THESIS PLAN

1. A reading knowledge of one foreign language (German, French, or Russian).
2. Seven approved courses (i.e., graduate and upper division undergraduate courses, including a minimum of five regular non-research courses).
3. A thesis.

PLAN II: COMPREHENSIVE EXAMINATION PLAN

1. A reading knowledge of one foreign language (German, French, or Russian).

2. A minimum of nine courses of graduate and upper division undergraduate courses, of which at least five must be in the 200 series courses in the specialization or major.
3. A comprehensive final examination in the major subject, its kind and conduct to be determined by the department concerned.

The Doctor of Philosophy in Biological Sciences

A student may pursue the Ph.D. directly 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 (usually, French, German, or Russian), or as to his ability to read and speak one appropriate foreign language. Ordinarily, not later than the second year of residence, the student will be required to take a single written or oral test. This test constitutes the first part of his qualifying examination. If he passes this test, then shortly afterward (i.e., usually within the same or the succeeding quarter) he is given the second (oral) part of his qualifying examination by his doctoral committee. If this examination is passed and the student admitted to candidacy, he may formally commence his dissertation research. Normally, it is expected that by this time some of his research would be under way. After presentation of the dissertation, the candidate is subject to an oral examination in defense of the dissertation.

The qualifying examination is given at two levels of competence. The first level will contain questions which all students are expected to answer and will test their broad knowledge of the unifying aspects of biology. The content of the second level examination will vary with the student's field of interest or specialization.

First Level of Competence

Students are tested on their knowledge of those phenomena common to all living organisms as well as those unifying fields which deal with aggregates of living organisms. Specifically, broad knowledge of the following fields is required: biochemistry, cytology, genetics, morphology, physiology, psychobiology, ecology, and evolution. The level of performance demanded is that between a UCI graduate (B.A.) in Biological Sciences and a Ph.D. candidate who has one of these fields as his special area of concentration. For instance, two students, one interested in ecology and the other in genetics, will be expected to answer questions in each other's field at a level of sophistication beyond that of a Biological Sciences senior, but not with sophistication and depth required of each in his own field in the second part of the examination.

Second Level of Competence

Here the student is questioned within the field or fields of his special interest. As already indicated, there is not a fixed set of

fields from which the student makes a choice. Rather, the field or fields in which a student is tested are based upon the particular student's interests. For example, a student might be examined in one of the following fields or combinations of fields:

Behavior Biochemistry Cell Biology
Comparative Physiology Developmental Biology
Ecology Environmental Biology Evolution
Genetics Invertebrate Biology
Microbiology Neurophysiology Parasitology
Pathobiology Plant Morphogenesis
Population Genetics Psychobiology Systematics and Taxonomy
Virology

The questions are designed to test both the student's general knowledge over the extent of his field or fields and detailed knowledge of his special interests within the area.

Courses of Study

HONORS PROGRAM:

Honors Seminar: Contemporary problems in modern biology will be discussed as a joint venture between students and several of our faculty members at weekly sessions. This is a challenge to "stretch the mind" and to venture into research. Any sophomore or junior biological major interested in the Honors Program may be considered by giving his or her name to Mrs. Heckman in the Divisional Office.

Honors Courses: All honors students majoring in biological sciences are eligible to enroll in these courses. Students enrolled in the program must take at least two quarters of honors courses (197H and/or 198H), and must pass an oral examination at the end of their last quarter. Graduation with honors may be recommended for those who maintain their standing as honor students throughout their last two years, satisfactorily complete the honors courses, and pass the comprehensive examination. The Honors Program advisor will help plan each honor student's Honors Program individually, and his approval of their programs will be required.

THE DIVISIONAL UNDERGRADUATE CORE CURRICULUM
Under the Supervision of the Division

(See programs of separate Departments in the Division for special offerings and "Satellite" and graduate courses.)

1A-B-C *Introductory General Biology* (1-1-1) fall, winter, spring Lectures and laboratory. This three quarter course is taken by nonmajors (freshmen through seniors) as well as majors in the biological sciences. Designed as terminal course for nonmajors. Introduction to the Core for majors. Animals and plants as organ-

isms. Molecular through population biology. The role of biological sciences in human affairs.

101 *Organismic Biology* (Structure and Function) (1) fall
Lectures and laboratory. Prerequisite: *Biological Sciences* 1A, 1B, 1C, or equivalents.

102 *Cell Biology* (1) winter
Lectures and laboratory. Prerequisites: *Biological Sciences* 101 or equivalents; *Chemistry* 1A, 1B, 1C; mathematics (calculus); physics.

103 *Organismic Biology* (Growth and Development) (1) spring
Lectures and laboratory. Prerequisite: *Biological Sciences* 102.

104 *Psychobiology* (Behavior) (1) fall
Lectures and laboratory. Prerequisite: *Biological Sciences* 103.

105 *Population and Environmental Biology* (1) winter
Lectures and laboratory. Prerequisite: *Biological Sciences* 104.

106 *Molecular Biology* (1) spring
Lectures and laboratory. Prerequisites: *Biological Sciences* 105, organic chemistry and, if possible, physical chemistry.

UNDERGRADUATE COURSES NOT A PART OF THE CORE

2 *Honors Seminar in General Biology* (1-1-1) fall, winter, spring
Prerequisite: *Biological Sciences* 1A and 1B, current enrollment in 1C; or passing with a grade of B or better a special examination in biological sciences. Enrollment by invitation only. Advanced study of selected current topics in the biological sciences.

197H *Special Study for Honors Students* (1-1-1) fall, winter, spring
Prerequisite: Enrollment limited to honors students. Independent research and/or reading on selected subjects.

198H *Honors Thesis* (½-1) fall, winter, spring
Prerequisite: Course 197H. Preparation of comprehensive thesis incorporating studies undertaken in Course 197H.

199 *Special Study for Advanced Undergraduate Students* (½-1) fall, winter, spring
Review of selected research topics. Preparation of a term paper. Group instruction in bibliographic procedures and organization of a review article. Normally taken at the end of the senior year.

■ *Department of Molecular and Cell Biology*

AREA CONCERNED: 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, physicochemical organization, cell pathology, homeostatic mechanisms (including energetics and steady-states), cell ecology, and evolutionary potential are among other emphases in graduate courses.

SATELLITE COURSES

120 *Microbial Genetics* (1) spring
Prerequisite: *Biological Sciences* 102 or consent of instructor.

GRADUATE COURSES

200 A-B-C *Research in Molecular and Cell Biology* (½ to 1½ per quarter) fall, winter, spring
A limited number of qualified graduate students will be admitted with the approval of the staff.

202 *Advanced Microbiology* (1) winter
Lecture and discussion course including literature review and student reports.

204 *Biochemistry* (1) spring
Lecture and discussion course including literature review and student reports.

205 *Cell Biology-Animal Virology* (1) fall
Lecture and discussion course including literature review and student reports.

206 *Cell Physiology* (1) winter
Prerequisites: A course in biochemistry and one in microbiology or consent of instructor.

290 A-B-C *Colloquium in Molecular and Cell Biology* (½-½-½) fall, winter, spring
Lecturers or invited speakers will introduce research and review topics.

■ *Department of Organismic Biology*

AREA CONCERNED: Organismic biology is concerned with the structure, function, and developmental biology of plants and animals and with such fields as symbiosis and pathobiology. Undergraduate and graduate instruction in these areas is offered. Problems as diverse and as challenging as differentiation, transport mechanisms, hormonal integration, immune responses, and biological rhythms are at the center of the subject. In attacking them we must use principles of biology at all levels from molecular to population. This is simply to say that 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.

SATELLITE COURSES

130 *Invertebrate Zoology* (1) winter
Lectures and laboratory. Prerequisite: Upper division or graduate registration and consent of instructor.

131 *Comparative Animal Physiology* (1) spring
Lectures and laboratory. Prerequisite: Upper division or graduate registration and consent of instructor.

132 *Comparative Morphology of Vascular Plants* (1) spring
Lectures and laboratory. Prerequisite: Upper division or graduate registration and consent of instructor.

133 *Symbiosis* (1) spring
Lectures and laboratory. Prerequisite: Upper division or graduate registration and consent of instructor.

GRADUATE COURSES

200A-B-C *Research in Organismic Biology* (½ to 1½ per quarter) fall, winter, spring
Prerequisite: Graduate registration and consent of instructor.

201A-B-C *Seminar* (1-1-1) fall, winter, spring
Advanced study in various fields of organismic biology. Topics will vary from year to year. The program for 1966-67 will include seminars in:

(a) Comparative Animal Physiology
(b) Developmental Biology
(c) Pathobiology
(d) Plant Growth and Development
(e) Topics in Theoretical Biology

290A-B-C *Colloquium in Organismic Biology* (½-½-½) fall, winter, spring
Lecturers or invited speakers will introduce research and review topics.

■ *Department of Population and Environmental Biology*

AREA CONCERNED: The areas of study with which the Department of Population and Environmental Biology are especially concerned include environmental biology, community ecology, ecological regulation, homeostatic mechanisms and energy flow in ecosystems. Such studies complement considerations of the nature and structure of plant and animal communities, population dynamics including the human population explosion, regulation and mensuration. Developing from and associated with these areas of investigation is research on problems in population genetics, population ecology, fertility and reproduction, taxonomy and systematics, macro- and micro-evolution, speciation, biogeography and paleoecology, marine ecology and ichthyology.

SATELLITE COURSES

141 *Introductory Ecology* (1) spring
Lecture, laboratory, field. Prerequisites: Registration for upper division work or graduate studies and consent of instructor.

142 *Population Genetics* (1) winter
Alternate years — to be offered next in 1967-68. Lecture, laboratory. Prerequisites: Registration for upper division work or graduate studies and consent of instructor.

143A-B *Marine Ecology* (1-1) fall, winter
Lecture, laboratory, field. Prerequisites: Registration for upper division work or graduate studies and consent of instructor. Course 143B cannot be taken without completion of course 143A.

144A-B *Ichthyology* (1-1) fall, winter
Alternate years—to be offered next in 1967-68. Lecture, laboratory, field. Prerequisites: Registration for upper division work or graduate studies and consent of instructor.

145 *Population Dynamics* (1) winter
Lecture, laboratory, field. Prerequisites: Registration for upper division work or graduate studies and consent of instructor. Offered in alternate years.

146 *Human Genetics* (1) spring
Lecture. Prerequisites: Registration for upper division or graduate studies and consent of instructor.

147 *Community Ecology* (1) spring 1967
Lecture, laboratory, field. Prerequisites: Completion of course 141, Population and Environmental Biology, or equivalent introductory ecology course, with consent of instructor.

GRADUATE COURSES

200A-B-C *Research in Population and Environmental Biology* (½-1½ per quarter) fall, winter, spring
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
Advanced study in areas of population and environmental biology. Topics will vary from year to year.

210 *Fundamentals of Tropical Biology* (2) spring, summer
This eight-week course is given in the spring and again in the summer in Costa Rica. Prerequisite: Registration for graduate work in the Division of Biological Sciences. Includes lectures and field work at San Jose and field stations in various regions of Costa Rica. Consult Dr. A. S. Boughey regarding this course.

211 *Advanced Tropical Biology* (2)
This eight-week course is given in the spring and again in the summer in Costa Rica. Prerequisites: Registration for graduate work in the Divison of Biological Sciences and some previous experience in tropical biology. Includes lectures and especially field work at the various Organization for Tropical Studies' centers at Costa Rica; is directed towards zoological aspects. Consult Dr. A. S. Boughey regarding this course.

212 *Advanced Tropical Biology* (2)
This eight-week course is given in the spring and again in the summer in Costa Rica. Prerequisites: Registration for graduate work in the Division of Biological Sciences and some previous experience in tropical biology. Includes lectures and especially field work at the various Organization for Tropical Studies' centers at Costa Rica; is directed toward botanical aspects. Consult Dr. A. S. Boughey regarding this course.

290A-B-C *Colloquium in Population and Environmental Biology* (½-½-½) fall, winter, spring
Lecturers or invited speakers will introduce research and review topics.

■ *Department of Psychobiology*

AREA CONCERNED: The Department of Psychobiology is concerned with those aspects of psychology strongly oriented toward problems of biological nature. Emphasis is given to problems concerning the biochemical, genetic, and neurophysiological systems underlying attention, perception, learning, memory, motivation, emotion, and instinctive behavior. It is recognized that a general understanding of these processes requires a comparative approach. In other words, psychobiology is concerned with the biological bases of behavior.

SATELLITE COURSES

150 *Advanced Psychobiology* (Animal Behavior) (1) winter
Lecture and laboratory. Prerequisite: *Biological Sciences* 103, or one year of college biological sciences, or a semester of zoology or *Psychology* 1B.

151 *Undergraduate Seminar in Psychobiology* (1) spring
Prerequisite: Consent of instructor.

GRADUATE COURSES

200A-B-C *Research in Psychobiology* (½ to 1½ per quarter) fall, winter, spring

201A-B-C *Seminar in Psychobiology* (1-1-1) fall, winter, spring
Topics will vary from term to term and from year to year. May be repeated for credit.

202 *Methods in Psychobiology* (1) fall, winter, spring

203 *Comparative Behavior* (1) fall

204 *Learning and Memory* (1) winter

205 *Neurophysiological Bases of Behavior* (1) spring

290A-B-C *Colloquium in Psychobiology* (½-½-½) fall, winter, spring
Lecturers or invited speakers will introduce research and review topics.

SAMPLE PROGRAM FOR BIOLOGICAL SCIENCES MAJORS

(This is merely a suggested program: advisor may make other recommendations.)

All courses in italics are required for the baccalaureate in biological sciences. Electives should include a coherent group of courses (usually in the biological sciences) selected in consultation with student's advisor.

Biological Sciences 1A-B-C may be taken by majors in their freshman year if so doing provides them with a more compatible program during their sophomore year. (Most majors would ordinarily take their beginning year of biology when they are sophomores.) Students may be excused from *Biological Sciences* 1A-B-C by examination, usually by taking the final examination of the course during the previous year.

	FALL	WINTER	SPRING
FRESHMAN	*Chemistry* 1A	*Chemistry* 1B	*Chemistry* 1C
	Calculus 2A or Math 5A	*Calculus* 2B or Math 5B	*Calculus* 2C or Math 5C
	English	English	English
	Social Sciences 1A	Social Sciences 1B	Social Sciences 1C
SOPHOMORE	*Biological Sciences* 1A	*Biological Sciences* 1B	*Biological Sciences* 1C
	Organic Chemistry 51A	*Organic Chemistry* 51B	*Organic Chemistry* 51C
	Physics 3A	*Physics* 3B	*Physics* 3C
	Elective	Elements of Logic 10	Ethics 15
JUNIOR	*Biological Sciences* 101	*Biological Sciences* 102	*Biological Sciences* 103
	*Physical Chemistry 131A	*Physical Chemistry 131B	*Physical Chemistry 131C
	History of Science 106A	*History of Science* 106B	Elective
	Elective	Elective	Elective
SENIOR	*Biological Sciences* 104	*Biological Sciences* 105	*Biological Sciences* 106
	Language or Elective	Language or Elective	Language or Electives
	Fine Arts	Fine Arts	Fine Arts
	Elective	Elective	Elective

*For students intending to specialize in Molecular and Cell Biology.

THE FACULTY

CLAYTON GARRISON, *Professor of Drama and Dean of Fine Arts*

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

ROBERT S. COHEN, *Assistant Professor of Drama*

JOHN COPLANS, *Assistant Professor of Art and Director of the Gallery*

TONY DE LAP, *Assistant Professor of Art*

JOHN ELLIOTT, *Senior Scene Technician and Technical Director*

EUGENE LORING, *Senior Lecturer in Dance and Chairman of Dance*

DAVID METZGAR, *Assistant Professor of Art*

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

JAMES PALMER, *Senior Wardrobe Technician*

JAMES PENROD, *Assistant Professor of Dance*

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

DANIEL STEIN, *Acting Assistant Professor of Drama*

RICHARD TRIPLETT, *Assistant Professor of Drama*

ROGER WAGNER, *Lecturer in Music*

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

2 THE DIVISION OF FINE ARTS

The Division 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. The Division does not view the arts merely as ornaments of civilization, but as organic components of life concerned with human vitality and vision.

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 Division of Fine Arts is comprised of the departments of Art, Drama, Music, and Dance, with the Dean of the Division 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 Division 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 Division 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 Division 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 move-

ment 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, flexibilty, 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*

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 *Life 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.

JUNIOR-SENIOR COURSES

Courses in history of art (the sequence from 100 through 130) will be offered in alternate years, except for courses in 20th Century art which will be offered each year. The basic concern in most courses in the history of art will be with the problems of the artist in his time. All advanced problem and tutorial courses may be repeated for credit.

100 *Art of the Americas* (1)
102 *Primitive Art: Africa and the Pacific* (1)
104 *Ancient Art of the Near East* (1)
106 *Greek Art* (1)
108 *Roman Art* (1)
110A-110B *Medieval Art* (1-1)
110A Early Christian to Romanesque.
110B Romanesque to Gothic.
112 *Dürer and the Problems of the Artist in the Northern Renaissance* (1)
114 *Leonardo and the Problems of the Artist in the Italian Renaissance* (1)
116 *Rembrandt and the Problems of the Artist in the Baroque* (1)
118 *European Art in the 18th Century* (1)
120 *Impressionism and the Problems of the Artist in 19th Century Art* (1)
124 *Picasso and the Problems of the Artist in the 20th Century* (1)
126 *Frank Lloyd Wright and 20th Century Architecture* (1)
127 *History of Design* (1)
128 *Art and Technology* (1)
129 *The New American Painting* (1)
130A-130B-130C *History of Far Eastern Art* (1-1-1)
130A India.
130B China.
130C Japan.
140 *Criticism of Art* (1)
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)
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)

■ *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* (½)
May be repeated for credit.
65 *Dance Notation* (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* (½)
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.*

■ *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* (½)
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

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:* 1870-1920 (1)

151 *Advanced Scene Design* (1) May be repeated for credit.

152 *Advanced Lighting Design* (1) May be repeated for credit.

155 *Advanced Costume Design for Theatre* (1) May be repeated for credit.
160 *Advanced University Theatre* (½) 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.

■ *Music*

FRESHMAN-SOPHOMORE COURSES

5A-5B-5C *Musicianship I* (½-½-½)
10 *Basic Piano* (½)
For music and dance 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)

152 *History of Opera* (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)

170 *Orchestration* (1)

180 *Music Criticism* (1)

190 *Studio Tutorials in Music* (piano, strings, winds, voice) (½)

■ *Fine Arts*

(Interdisciplinary Courses)

FRESHMAN-SOPHOMORE 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)

JUNIOR-SENIOR COURSES

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.

THE FACULTY

SAMUEL C. MCCULLOCH, *Professor of History and Dean of Humanities*

ENGLISH

HAZARD ADAMS, *Professor of English and Chairman of the Department*

JOHN F. ADAMS, *Associate Professor of English*
HOWARD S. BABB, *Associate Professor of English*
JOSEPH N. BELL, *Lecturer in English*
DONALD BRANNAN, *Acting Assistant Professor of English*
JAMES L. CALDERWOOD, *Assistant Professor of English*
PETE E. CLECAK, *Assistant Professor of English*
PAUL FRIZLER, *Acting Assistant Professor of English*
HARVEY GROSS, *Associate Professor of English* (on leave 1966-67)
JAMES B. HALL, *Professor of English and Director of the Writing Center*
DONALD HEINEY, *Professor of English and Comparative Literature and Director of Comparative Literature*
JOHN HUDDLESTON, *Associate in English and Director of Subject A*
X. J. KENNEDY, *Visiting Lecturer in Poetry*
MARY KEY, *Assistant Professor of English*
ELVA B. KREMENLIEV, *Lecturer in English*
MURRAY KRIEGER, *Professor of English* (on leave 1966-67)
JAMES MCMICHAEL, *Assistant Professor of English*
EDGAR T. SCHELL, *Assistant Professor of English*
STEPHEN SHAPIRO, *Assistant Professor of English*
HAROLD TOLIVER, *Assistant Professor of English*
ALBERT O. WLECKE, *Acting Assistant Professor of English*
CHARLES P. WRIGHT, JR., *Lecturer in English*

FOREIGN LANGUAGES AND LITERATURES

SEYMOUR MENTON, *Professor of Spanish and Portuguese and Chairman of the Department*

HOWARD A. APPEL, *Acting Assistant Professor of French*
RICHARD BARRUTIA, *Assistant Professor of Spanish and Director of the Language Laboratory*
THOMAS E. BERRY, *Acting Assistant Professor of Russian*

2 THE DIVISION OF HUMANITIES

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 Division is composed of the Departments of English, Foreign Languages and Literatures, History, and Philosophy, and offers baccalaureate work in comparative literature, English, history, philosophy, and in foreign languages and their literatures, including classics. The Division encourages joint majors, majors with supporting work in related disciplines, and, wherever practicable, interdisciplinary programs and comparative studies. For students in other divisions 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 and the Interdepartmental Program in Comparative Literature plan work leading to the Master of Arts and Doctor of Philosophy degrees. The Department of English plans, 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.

IDALIA C. BOBONIS, *Associate in Spanish*
THEODORE F. BRUNNER, *Assistant Professor of Classics*
HENRI DIAMENT, *Assistant Professor of French*
RICHARD I. FRANK, *Assistant Professor of Classics and History*
RICHARD O. W. GOERTZ, *Acting Assistant Professor of Spanish*
ALICE M. LABORDE, *Assistant Professor of French*
JOHN D. LINDBERG, *Assistant Professor of German*
JULIAN PALLEY, *Associate Professor of Spanish*
WILM A. PELTERS, *Assistant Professor of German*
VERA T. RECK, *Lecturer of Russian*
HELIA REESE, *Associate in Spanish*
LUCIEN ANTOINE RICO, *Associate in French*
PAUL R. SCHIMMELPFENNIG, *Acting Assistant Professor of German*
HERBERT W. SOMMER, *Assistant Professor of German*
OTTO MAURICE SORENSEN, *Acting Assistant Professor of German*
FRANCO TONELLI, *Assistant Professor of French*
JUAN VILLEGAS, *Associate Professor of Spanish*
HENRY H. WEINBERG, *Assistant Professor of French*
CELIA ZAPATA, *Associate in Spanish*

HISTORY

HENRY CORD MEYER, *Professor of History and Chairman of the Department*

ROBERT J. CALATRELLO, *Lecturer in Education*
RICHARD I. FRANK, *Assistant Professor of History and Classics*
KARL G. HUFBAUER, *Acting Assistant Professor of History*
JON S. JACOBSON, *Assistant Professor of History*
GEORGE W. KENT, *Assistant Professor of History*
R. ALAN LAWSON, *Acting Assistant Professor of History*
ROBERT H. LUCAS, *Assistant Professor of History*
ARTHUR J. MARDER, *Professor of History*
KEITH L. NELSON, *Assistant Professor of History*
SPENCER C. OLIN, JR., *Assistant Professor of History and Coordinator of Academic Advising*
JAMES ALAN ROGERS, *Acting Assistant Professor of History*

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*
JASON L. SAUNDERS, *Adjunct Professor of Philosophy (Professor of Philosophy, U. C., San Diego)*
GUY J. SIRCELLO, *Assistant Professor of Philosophy*

TEACHER TRAINING. Students interested in preparing for secondary and junior college teaching in the humanities follow the regular program for majors in the humanities. With their advisors they plan a program with an appropriate teaching major and minor. In the senior year or after graduation they engage in teaching preinternships in cooperating schools.

■ INTERDEPARTMENTAL PROGRAM IN COMPARATIVE LITERATURE

Undergraduate Program

The Program in Comparative Literature is administered by an interdepartmental committee including members from the fields of the various modern and classical literatures and drama. The program is based on the assumption that important literary problems are not totally national but 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, transcending the limitations of conventional departmentalization of the American university.

The listed courses in Literary Genres and Literary History and Relations are specifically 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 the evolution 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.

Graduate Programs

There are at least four avenues by which the UCI student may approach graduate work in Comparative Literature:

(a) The undergraduate major in Comparative Literature described above.

(b) A normal English major in literary history and 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.

Makeup 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

In the program now being planned, the candidate should complete course work for the equivalent of three quarters. This course work should include CL 200 *(Methods of Comparative Study)*, CL 220 *(Problems in Translation)* with speciality 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. Graduate study in Comparative Literature requires an exceptional facility in foreign languages, and the student should not attempt a Master's degree without a thorough knowledge of one foreign language and literature and a considerable knowledge of a second language. Normally these two basic languages are French and German, since these are the traditional tools of international scholarship in Comparative Literature.

THE DOCTOR OF PHILOSOPHY IN COMPARATIVE LITERATURE

Details of the planned doctoral program in Comparative Literature may be obtained from the Comparative Literature committee. 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 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.

■ DEPARTMENT OF ENGLISH

Every student intending to major in English should obtain a copy of *English Study at Irvine* from the Departmental office.

Undergraduate Programs

Departments of English are concerned with a variety of subjects: English as a language, perhaps as a foreign language, per-

haps from the point of view of descriptive linguistics; with literary history, literary criticism and theory, comparative literature, and the history of ideas; with expository writing, rhetoric, the writing of poetry, prose fiction, and drama. These subjects are related to each other, but at the same time each is a somewhat different discipline. Nevertheless, the modern English Department's concern is, at center, always literary, and the best literary minds are concerned with the nature and value of literature, the approaches to literary works, and the relationship of literary criticism to other intellectual issues of the times. Though not alone in the task, a modern department of English recognizes a continuing obligation to help all students write the English language with clarity and grace.

The department offers to the undergraduate who intends to major in English three essential areas of study:

1. Criticism and Literary History: The study of literary criticism and the development of English and American literature.
2. The Art of Writing: The writing of poetry, prose fiction, and/or drama.
3. Comparative Literature (See Interdepartmental Program in Comparative Literature): The formal study of literature in courses not limited to the literature of one nation or language.

These areas are not discrete entities. Rather, the student is invited to take work in all three, with an emphasis on one. A student of literature should recognize the importance of understanding literary problems of a theoretical nature, of developing a broad literary experience which transcends national boundaries, and of experiencing the problems of literary creation at first hand. The student should form a coherent program of courses with the help of his advisor, including experience in special small classes in criticism, the senior seminar or the workshop in writing, and a comprehensive examination in literary history. The department offers opportunity to study with particular teachers, 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 divisions and schools of the university to take work in English, 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 necessary to a liberal education.

Many of the courses offered, particularly those devoted to the historical periods of English or American 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 history that no course can possibly treat all of the major authors or important works of a given age, and that each teacher

is charged with organizing classes and readings which, in recognition of this fact, provide basic understanding and point in proper directions.

Graduate Programs

The Department of English 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 three-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 and literary history, comparative literature (see Comparative Literature), and the art of writing—are reflected in the graduate programs: the M.A. and Ph.D. in criticism and literary history 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 of English and the Directors of the special programs are 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. A full course load for teaching assistants is five quarter courses during the academic year.

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 under 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 at least one-half 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 in the English Department, 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. Humanely, there is no defense of the approved 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 will normally include about eighteen courses of work beyond the B.A.; 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 may fulfill 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. However, 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 in two areas of English and/or American literary history, on one literary genre, on literary theory and criticism, and on the work of one major writer. Four of these examinations are written, the fifth oral. The student may elect the area of his oral examination. The student's choice of examinations must enable him to demonstrate breadth of knowledge and literary understanding. The choice must be approved by his advisory committee. Certain alternatives to this series of examinations may be allowed upon application and advisory consent.

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. Completion of the dissertation and an oral examination complete the work for the Ph.D.

■ Department of Foreign Languages and Literatures

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.

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 course 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 and second year Latin and Russian is also available. As soon as practicable, instruction in other languages will be initiated.

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

■ Department of History

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 aspects of life, artistic expressions, intellectual achievements, scientific progress, and religious beliefs.

Courses in history are open to all students in the University. Many freshmen and sophomores will find *Western Traditions* or *American Thought and Culture* most suitable for their programs. Students with sophomore standing may enroll for *East Asian Civilizations, British Traditions and Institutions,* or *History of Scientific Thought and Technique.* Normally, *Western Traditions,* its equivalent, or consent of the instructor is a prerequisite to all other advanced courses in history.

The baccalaureate program in history attempts to bring students abreast of contemporary national and world realities. Since candidates should be familiar with the intellectual and cultural history of western civilization as well as that of their own nation, the introductory courses are broadly conceived. The department favors interdisciplinary approaches within its own courses, and urges candidates to select related courses in the Humanities, Fine Arts, and Social Sciences.

Contemporary reality indicates that no one can restrict his understanding to that of a single nation or civilization. Candidates should become familiar with a nonwestern society early in their program. Study of a modern foreign language and culture should further diminish parochialism and help prepare students for junior-senior work.

After *History* 10ABC, 50ABC, and 80ABC, majors will begin advanced study with a detailed examination of the work of great historians and historiography. Advanced courses will offer students the opportunity to use a foreign language. In the Senior Seminar, each major will write an essay demonstrating basic understanding of historical method and use of effective style. Formal course work culminates in a study of America in world perspectives. Independent reading is recommended as an import-

ant supplement to courses in preparing for the senior comprehensive examination, held in the spring quarter of the senior year. Lists of suggested readings in various fields and detailed information on the program for majors are available in the History Department Handbook obtainable in the departmental office.

An Honors Program is planned for upper division students, beginning in 1967-68. Graduation with Honors in History will be recommended only for students enrolled in the Honors Program.

Graduate Program

THE MASTER OF ARTS IN HISTORY

In the program planned for 1966-67, the candidate is encouraged to complete his study of nine courses within three quarters. Individual programs will be worked out with a graduate advisor. They will include *Advanced Historiography,* several colloquia and seminars, and *America in World Perspectives.* Candidates must maintain a B average and complete a written examination at the end of the course of study. Reading proficiency in a modern foreign language must be demonstrated before enrollment in the second quarter or for a fourth course. Qualified students will be accepted for part-time study over a maximum period of three years. For further details consult the Graduate History Handbook available in the departmental office.

■ 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 and, wherever possible, is held in small classes in which sustained dialogues may be conducted.

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 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

The candidate for the M.A. will be required to pass a proficiency reading examination in a designated foreign language not later than the second quarter of his residence. The program for the M.A. is designed as a one-year program for the normally well qualified student. Plan I will be adopted; i.e., the student will be required to write and to pass an oral examination on a thesis.

The Doctor of Philosophy in Philosophy

The Ph.D. degree is designed as a four-year program for the qualified student. Normally, but not necessarily, the student will take the M.A. before going on for the Ph.D. The program for the Ph.D. will require proficiency in the reading of two acceptable foreign languages. In addition, the student must pass written qualifying examinations in selected fields of philosophy. These, normally, will be taken before the end of the second year of graduate work. Upon successful completion of these examinations, the student will be recommended by the department for admission to candidacy for the Ph.D. degree. After formal admission to candidacy the student will be assigned to a supervisory committee. The committee, which includes scholars in the student's field of concentration, will thereafter guide and supervise the student through his study, research, and the writing of the thesis. Upon completion of the thesis, the candidate will defend it in an oral examination.

Courses of Study

■ *Comparative Literature*

UNDERGRADUATE COURSES

101 *Studies in Literary Genres: Epic* (1)
102 *Studies in Literary Genres: Tragedy* (1)
103 *Studies in Literary Genres: Comedy* (1)
104 *Studies in Literary Genres: Novel* (1)
105 *Studies in Literary Genres: Lyric* (1)
106 *Special Studies in Literary Genres* (1)
110 *Studies in Literary History and Relations: Renaissance* (1)
111 *Studies in Literary History and Relations: Neoclassicism* (1)
112 *Studies in Literary History and Relations: Romanticism* (1)
113 *Studies in Literary History and Relations: Realism* (1)
114 *Special Studies in Literary Movements* (1)
(May be repeated when topic varies)
188 *Reading and Conference* (1) By permission.
(May be repeated)
189 *Senior Seminar in Comparative Literature* (1)

GRADUATE COURSES

(All courses may be repeated when the topic varies)
200 *Methods of Comparative Study* (1)
210 *Comparative Studies* (1)
220 *Problems in Translation* (1)
290 *Reading and Conference* (1)

■ *English*

(Satisfaction of the Subject A requirement is a prerequisite to all English courses)

UNDERGRADUATE COURSES

5 *Thought and Process in Writing* (1)
10 *Functions of Language* (1)
Prerequisite: *English* 5
15 *Approaches to Literary Language* (1)
Prerequisite: *English* 10
20 *The Nature of Drama: Structure and Style* (1)
(Same as *Drama* 20)
22 *Shakespeare* (1)
(Same as *Drama* 22)
23 *The Nature of Poetry* (1)
24 *The Nature of Fiction* (1)
26 *Literature and Society* (1)
Wr 30 *The Art of Writing: Poetry* (1)
Wr 31 *The Art of Writing: Prose Fiction* (1)

Wr 32 *The Art of Writing: Drama* (1)
Wr 38 *The Art of Writing: Non-Fiction and Journalism* (1)
Wr 39 *Advanced Expository Writing* (1)
Prerequisite: *English* 10 or consent of instructor.
40A-40B-40C *Development of Drama* (1-1-1)
(Same as *Drama* 40A-40B-40C)
100 *Junior Studies in Theory and Practice* (1-1)
Junior majors in English or Comparative Literature only.
May be taken twice, though topic and instructor must vary. Fall enrollment with director of course is necessary to reserve space for fall, winter, and spring sections.
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 the writing program, others by consent. May be repeated.
Wr 125 *Senior Workshop in Writing* (1) Majors in the writing program only.
130 *Literature and Politics* (1)
132 *Literature and Psychology* (1)
133 *Literature and Science* (1)
134 *Literature and the Other Arts* (1)
144 *Medieval and Tudor Drama:* 900-1580 (1) (Same as *Drama* 144)
145 *Elizabethan and Jacobean Drama:* 1580-1642 (1) (Same as *Drama* 145)
146 *Shakespeare* (1) (Same as *Drama* 146)
147 *Restoration and Eighteenth Century Drama* (1) (Same as *Drama* 147)
148 *Modern British Drama:* 1870-1940 (1) (Same as *Drama* 148)
149 *Modern American Drama:* 1870-1940 (1) (Same as *Drama* 149)
150 *Medieval Literature* (1)
155 *Renaissance English Literature* (1)
160 *17th Century English Poetry and Prose* (1)
162 *18th Century English Poetry and Prose* (1)
165 *Early Nineteenth Century English Poetry and Prose* (1)
167 *Later Nineteenth Century English Poetry and Prose* (1)
169 *Early Twentieth Century English Literature* (1)
171 *Early Nineteenth Century American Literature* (1)
172 *Later Nineteenth Century American Literature* (1)
173 *Early Twentieth Century American Literature* (1)
175 *Writing since* 1945 (1)
176 *The Literary Situation: The Sixties* (1)
180 *Studies in Poetry* (1)
181 *The Novel* (1)
182 *Studies in Criticism* (1)

183 *Special Studies* (1)

184 *History of the English Language* (1)

185 *Introduction to Linguistics* (1) (Same as *Linguistics* 100)

186 *Modern English Grammar* (1)

187 *Linguistics Studies* (1)

188 *Reading and Conference*
By consent, by arrangement. May be repeated.

189 *Senior Seminar in Criticism and Literary History* (1)
Senior English majors in Criticism and Literary History only.

GRADUATE COURSES

(All courses may be repeated when the topic varies)

200 *Studies in the English Language* (1)

201 *Studies in Linguistics* (1)

210 *Studies in Literary History* (1)

220 *Studies in Criticism* (1)

225 *Studies in Literary Genres* (1)

230 *Studies in Major Writers* (1)

235 *Methods of Literary Scholarship* (1)

240 *Rhetoric and Writing* (1)
Teaching Assistants in English only, by consent.

241 *Problems in Expository Writing* (1)
By consent.

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

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

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

■ *Foreign Languages & Literatures*

Students will be placed in foreign language courses according to their performance on a placement examination. Students should take the College Entrance Examination Board test at their high schools during their senior year. Normally no credit will be given for work previously taken in high school. 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.

CLASSICS

Lower Division Courses

Greek 1A-1B-1C *Fundamentals of Greek* (1-1-1)
Not offered in 1966-67.
Latin 1A-1B-1C *Fundamentals of Latin* (1-1-1)
Latin 2A-2B-2C *Intermediate Latin* (1-1-1)

Upper Division Courses

Greek 150A-150B-150C *Greek Literature in Translation* (1-1-1)
Greek 199 *Special Studies in Greek* (1) May be repeated.
Latin 150A-150B-150C *Latin Literature in Translation* (1-1-1)
Latin 199 *Special Studies in Latin* (1) May be repeated.

FRENCH

Lower Division Courses

1A-1B-1C *Fundamentals of French* (1-1-1)
2A-2B-2C *French Reading and Composition* (1-1-1)
Prerequisite: Normally three years of high school French or one year of college French.
10A-10B *French Composition and Grammar Review* (1-1)
Prerequisite: Completion of *French* 2C or the equivalent.
11 *French Phonetics* (1)
Prerequisite: *French* 10B
12A-12B-12C *Introduction to French Literature* (1-1-1)
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.
110 *French Civilization* (1)
Prerequisite: *French* 10B or the equivalent.
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)
199 *Special Studies in French* (1)
May be repeated.

Graduate Courses

200A-200B *Romance Linguistics.* Historical development of modern (1-1)
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)
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 Theater* (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)
2A-2B-2C *German Reading and Composition* (1-1-1)
Prerequisite: Normally three years of high school German or one year of college German.
10A-10B *German Composition and Grammar Review* (1-1)
Prerequisite: Completion of *German* 2C or the equivalent.
11 *German Phonetics* (1)
Prerequisite: *German* 10B
12A-12B-12C *Introduction to German Literature* (1-1-1)
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.
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. Not offered in 1966-67.
117B *From the Reformation to Lessing* (1)
Offered in even-numbered years. Not offered in 1966-67.
118A *Lessing* (1)
Offered in odd-numbered years.
118B *Goethe* (1)
Offered in odd-numbered years.
118C *Schiller* (1)
Offered in odd-numbered years.
119A *Romanticism* (1)
Offered in even-numbered years.
119B *Nineteenth Century Drama* (1)
Offered in even-numbered years.

119C *Nineteenth Century Prose* (1)
Offered in even-numbered years.
120A *Twentieth Century Drama* (1)
Offered in odd-numbered years.
120B *Twentieth Century Prose* (1)
Offered in odd-numbered years.
120C *Twentieth Century Lyric* (1)
Offered in odd-numbered years.
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.
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 *The Enlightenment* (1)
Offered in even-numbered years.
218B *The "Sturm und Drang" Period* (1)
Offered in even-numbered years.
218C *The Classical Period* (1)
Offered in even-numbered years.
219A *Early Nineteenth Century Literature* (1)
Offered in odd-numbered years.
219B *Nineteenth Century Drama* (1)
Offered in odd-numbered years.
219C *Nineteenth Century Prose* (1)
Offered in odd-numbered years.
220A *Modern German Literature—Drama* (1)
Offered in even-numbered years. Not offered in 1966-67.
220B *Modern German Literature—Prose* (1)
Offered in even-numbered years. Not offered in 1966-67.
220C *Modern German Literature—Lyric* (1)
Offered in even-numbered years. Not offered in 1966-67.
299 *Research in German Language and Literature* (1)
May be repeated.

LINGUISTICS

100 *Introduction to Linguistics* (1)
Prerequisite: Two years of college English or foreign language.
199 *Special Studies in Linguistics* (1)
May be repeated.

PEDAGOGY

105 *Methods of Teaching Foreign Languages* (1)
Prerequisite: *Linguistics* 100 and senior standing as a foreign language major.

RUSSIAN

Lower Division Courses

1A-1B-1C *Fundamentals of Russian* (1-1-1)
2A-2B-2C *Second year Russian* (1-1-1)
Completion of the fundamentals of Russian; reading and composition. Prerequisite: Normally three years of high school Russian or one year of college Russian.

Upper Division Courses

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

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.
10A-10B *Spanish Composition and Grammar Review* (1-1)
Prerequisite: Completion of *Spanish* 2C or the equivalent.
11 *Spanish Phonetics* (1)
Prerequisite: *Spanish* 10B.
12A-12B-12C *Introduction to Hispanic Literature* (1-1-1)
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.
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)
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.

■ *History*

FRESHMAN-SOPHOMORE COURSES

10A-10B-10C *Western Traditions* (1-1-1) fall, winter, spring
50A-50B-50C *American Thought and Culture* (1-1-1) fall, winter, spring
80A-80B-80C *East Asian Civilizations* (1-1-1) fall, winter, spring

JUNIOR-SENIOR COURSES

100 *History and Historians* (1) fall
101A-101B-101C *British Traditions and Institutions* (1-1-1) fall, winter, spring
Open to sophomores.
106A-106B-106C *History of Scientific Thought and Technique* (1-1-1) fall, winter, spring
Open to sophomores. Prerequisite: three courses in college science.
116 *The Middle Ages* (1) spring
130A *Europe in the Nineteenth Century* (1) fall
(formerly *History* 120)
130B *Europe in the Twentieth Century* (1) winter
(formerly *History* 121)
146A-146B *Constitutional and Legal History of England* (1-1)
Not offered in 1966-67; to be offered 1967-68.
152 *Great Britain in the Twentieth Century* (1) spring
Not offered in 1966-67.
153B-153C *The British Commonwealth and Empire* (1-1) winter, spring
166A *Colonial America* (1) fall
166B *The National Era* (1) winter
170 *The United States in the Twentieth Century* (1) spring
(formerly *History* 169)
174 *Intellectual Currents in Twentieth-Century America* (1) fall

175 *California in Modern America* (1) winter
176B-176C *History of American Foreign Relations* (1-1) winter, spring
(formerly *History* 157B-157C)
179 *America in World Perspectives* (1) spring
183 *The Chinese Revolution, 1911-1966* (1) winter
190 *Independent Study* (1) fall, winter, spring
May be repeated. By consent.
199-10 *Senior Seminar: Europe Between Two World Wars* (1) fall
199-20 *Senior Seminar in American History* (1) spring
Topic to be announced.
199-28 *Senior Seminar: America's Emergence to World Power, 1898-1918* (1) winter

GRADUATE COURSES

200 *Advanced Historiography* (1) fall
207 *Colloquium: Science and Western Society in the Modern Era* (1) spring
235 *Seminar in Modern European History: Twentieth-Century Diplomacy* (1) winter
266 *Colloquium: American History* (1) fall
Topic to be announced.
270 *Seminar in American History* (1) winter
Topic to be announced.
274 *Seminar in American Intellectual History* (1) spring
279 *Colloquium: America in World Perspectives* (1) spring
280 *Colloquium: Europe and the Far East in the Modern Era* (1) fall
290 *Independent Study* (1) fall, winter, spring
May be repeated. By consent.

■ *Philosophy*

5 *Problems of Philosophy* (1) fall, winter, spring
10 *Elements of Logic* (1) fall, winter, spring
15 *Introduction to Ethics* (1) spring
20 *History of Philosophy: from the Pre-Socratics through Aristotle* (1) fall
Prerequisite: *Philosophy* 5 or permission of instructor.
21 *History of Philosophy: From the Stoics, Epicureans and Skeptics through the Middle Ages* (1) winter
Prerequisite: *Philosophy* 20 or permission of the instructor.
22 *History of Philosophy: From the Renaissance through Kant* (1) spring
Prerequisite: *Philosophy* 21 or permission of the instructor.
51 *Introduction to Mathematical Logic* fall
No prerequisite.

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) winter

101 *Intermediate Mathematical Logic* (1) winter
Prerequisite: *Philosophy* 51 or its equivalent.

110 *Theory of Knowledge* (1) spring

111 *Introduction to Set Theory* (1) spring
Prerequisite: *Philosophy* 101 or its equivalent.

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

120 *Introduction to Aesthetics* (1) fall

125 *Theory of Art and Criticism* (1) winter
Prerequisite: *Philosophy* 120 or permission of the instructor.

130 *Philosophy of Mind* (1) spring

140 *Philosophy of History* (1) fall

150 *Philosophy of Logic* (1) fall
Prerequisite: *Philosophy* 51 or its equivalent.

170 *British Empiricism* (1) spring
Prerequisite: *History of Modern Philosophy* or permission of the instructor.

180 *Philosophy of Kant* (1) winter
Prerequisite: *History of Modern Philosophy* or permission of the instructor.

190 *Directed Special Studies* (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 the History of Philosophy (Wittgenstein)* (1) fall
Prerequisite: Approval of the chairman.

201 *Seminar in the Philosophy of Plato* (1) fall
Prerequisite: Approval of the chairman.

206 *Seminar in Hellenistic Philosophy* (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) winter—not offered in 1966-67
Prerequisite: Approval of the chairman.

220 *Seminar in Aesthetics* (1) spring
Prerequisite: Approval of the chairman.

240 *Seminar in Metaphysics* (1) fall
Prerequisite: Approval of the chairman.

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

THE FACULTY

The Committee on Information and Communication Science:
J. FELDMAN, K. W. FORD, B. R. GELBAUM, R. W. GERARD,
J. G. MARCH, J. L. MCGAUGH, R. M. SAUNDERS, R. C. SNYDER,
F. M. TONGE
TIMOTHY P. HART, *Acting Assistant Professor of Information and Communication Science*

2 INTERDIVISIONAL PROGRAM IN INFORMATION AND COMMUNICATION SCIENCE

The interdisciplinary program in Information and Communication Science is concerned with the theoretical understanding of information, its representation, transmission, and processing in natural and artificial systems. The program involves work in biology, computer science, economics, engineering, linguistics, mathematics, and psychology, and is jointly sponsored by the Schools of Administration and Engineering, the Division of Social Sciences, and the Departments of Mathematics and Psychobiology.

It is expected that by the fall of 1966, a core group of scholars specializing in information processing and communications analysis will constitute a new faculty who will have primary responsibility for formulating undergraduate and graduate curricula. A Director will also be appointed. While formal degrees are not yet authorized, opportunities for systematic study in the Information and Communication Sciences will be enlarged during 1966-67.

Courses of Study

UNDERGRADUATE COURSES

1 *Digital Computer* (1) fall, winter, spring
180 *Special Topics* (1) fall, winter, spring
199 *Individual Study* (1) fall, winter, spring

GRADUATE COURSES

280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring
Faculty permission required for all 180, 199, 280 and 299 enrollments.

THE FACULTY

WAYNE H. CRAWFORD, *Associate Professor of Physical Education and Chairman of the Department*

RICHARD L. DAVIS, *Associate Supervisor of Physical Education*

ALBERT M. IRWIN, *Associate Supervisor of Physical Education*

EDWARD H. NEWLAND, *Lecturer in Physical Education*

DAN S. ROGERS, *Associate Supervisor of Physical Education*

RAYMOND H. THORNTON, *Associate Supervisor of Physical Education*

THE DEPARTMENT OF PHYSICAL EDUCATION 2

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.

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, horseback riding, and sailing.

THE FACULTY

FREDERICK REINES, *Professor of Physics and Dean of Physical Sciences*

CHEMISTRY

F. S. ROWLAND, *Professor of Chemistry and Chairman of the Department*

DAVID A. BRANT, *Assistant Professor of Chemistry*

DON L. BUNKER, *Associate Professor of Chemistry*

MARJORIE C. CASERIO, *Assistant Professor of Chemistry*

HANS O. DENSCHLAG, *Instructor in Chemistry*

ROBERT J. DOEDENS, *Assistant Professor of Chemistry*

MICHAEL H. FISCH, *Assistant Professor of Chemistry*

DONALD F. GURKA, *Instructor in Chemistry*

EDWARD K. C. LEE, *Assistant Professor of Chemistry*

GEORGE E. MILLER, *Instructor in Chemistry*

HAROLD W. MOORE, *Assistant Professor of Chemistry*

ROBERT W. TAFT, *Professor of Chemistry*

YI-NOO TANG, *Instructor in Chemistry*

WILLIAM E. WATERS, *Instructor in Chemistry*

MATHEMATICS

BERNARD R. GELBAUM, *Professor of Mathematics and Chairman of the Department*

TAKEO AKASAKI, *Assistant Professor of Mathematics*

FRANK CANNONITO, *Assistant Professor of Mathematics*

JAMES E. DELANY, *Assistant Professor of Mathematics*

WILLIAM DONOGHUE, *Professor of Mathematics*

MARK FINKELSTEIN, *Assistant Professor of Mathematics*

JOHN GROVER, *Acting Assistant Professor of Mathematics*

DAVID LEE HILLIKER, *Assistant Professor of Mathematics*

RICHARD JUBERG, *Associate Professor of Mathematics*

GERHARD K. KALISCH, *Professor of Mathematics*
(on leave 1966-67)

THE DIVISION OF PHYSICAL SCIENCES 2

The Division 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 Division are designed to meet the needs of a wide variety of students—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 Division 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. At the same time, it 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

In the belief that both understanding and satisfaction follow more from depth than from breadth, the Division offers no general survey course. Instead, each Department offers courses that are of value both to nonmajors and majors in the sciences. In each Department, the program for majors is designed to meet the needs both of students planning careers in other fields and of students planning graduate work that continues their major interest.

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 concen-

STEPAN KARAMARDIAN, *Assistant Professor of Mathematics and Administration*
ARNOLD LEBOW, *Assistant Professor of Mathematics*
ROBERT MALTZ, *Assistant Professor of Mathematics*
MEINHARD E. MAYER, *Professor of Mathematics and Physics*
GEORGE S. MCCARTY, *Assistant Professor of Mathematics*
CHARLES M. NAYLOR, *Acting Assistant Professor of Mathematics*
BERNARD RUSSO, *Assistant Professor of Mathematics*
WILLIAM SMOKE, *Assistant Professor of Mathematics*
HOWARD STRATTON, *Acting Assistant Professor of Mathematics*
NOBORU SUZUKI, *Acting Associate Professor of Mathematics*
ZENAS M. SYKES, *Assistant Professor of Mathematics*
EDWARD O. THORP, *Associate Professor of Mathematics*
JOEL WESTMAN, *Assistant Professor of Mathematics*
JAMES YEH, *Associate Professor of Mathematics*

PHYSICS

KENNETH W. FORD, *Professor of Physics and Chairman of the Department*
MYRON BANDER, *Assistant Professor of Physics*
RONNIE BURNS, *Assistant Professor of Physics*
ALFONSO CAMPOLATTARO, *Assistant Professor (Visiting) of Physics*
A. THEODORE FORRESTER, *Professor of Physics*
SYLVAN KATZ, *Lecturer in Physics*
ALEXEI A. MARADUDIN, *Professor of Physics*
MEINHARD E. MAYER, *Professor of Physics and Mathematics*
JAMES MERCEREAU, *Professor of Physics in Residence*
DOUGLAS L. MILLS, *Assistant Professor of Physics*
JOHN R. PELLAM, *Professor of Physics*
NATHAN RYNN, *Professor of Electrical Engineering and Physics*
JONAS SCHULTZ, *Associate Professor of Physics*
LU J. SHAM, *Assistant Professor of Physics*
GORDON L. SHAW, *Associate Professor of Physics*
THOMAS E. STARK, *Assistant Professor of Physics*
RICHARD F. WALLIS, *Professor of Physics*

trate very heavily in a second department within the Division, and, less frequently, will complete a double major.

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. Similarly, 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 more and more the international language of science, much important scientific literature is still printed in foreign languages, and, to an ever-increasing extent, scientists travel and 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 divisional requirement may be met by four years of work in one of these languages in high school, or by two years of work in a college or university, or by passing the final examination in a UCI language course numbered 2C. Mathematics majors may, alternatively, pass a technical reading examination in the foreign language. Physical sciences majors may enroll in language courses on a pass-fail basis.

Precise and clear expression in written English will be expected in course work in the Division. Students found wanting 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 Division. The individual programs are described in the following announcements of each department.

Department of Chemistry

Undergraduate Program

The chemistry curriculum introduces scientists and non-scientists to modern chemistry, and includes both lecture and laboratory work. The course in general chemistry can stand by itself as a one-year sequence introducing modern chemistry and is also suitable for students in other divisions. It is followed by a comprehensive one-year course in organic chemistry and a third year devoted to the physical aspects of chemistry, which completes the

sequence of lecture courses. In addition, chemistry majors will be expected to take the course in chemical instrumentation. Since the field of chemistry now ranges from close contact with the biological sciences (biochemistry) on the one hand to physics (chemical physics) on the other, the rest of the curriculum can be selected to suit individual interests. These choices include not only options in the senior year, but also the choice of other courses in other sciences which meet the requirements for the major. The senior year options in 1966-67 include extensive participation in undergraduate research, and enrollment in selected graduate courses in chemistry.

An honors program in chemistry emphasizes close contact with research.

Graduate Programs

The Department offers programs leading to both the M.A. and the Ph.D. degrees in chemistry. These programs are identical for the student during his first year of graduate work. The M.A. degree is granted in recognition of a broad knowledge of the facts and theories of modern chemistry, together with skill and competence in laboratory techniques; the Ph.D. degree is granted in recognition of the demonstrated ability to carry out independent research in chemistry.

Both programs rely on specific examinations of various kinds: area examinations over the general content of chemical knowledge; cumulative examinations over more recent specific developments in chemistry; and an oral examination in defense of original research propositions. The first examination is the key one 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 of residence is required. The requirements for the two plans are:

Plan I: Thesis Plan

1. A reading knowledge of one foreign language—(Russian, German, 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, or French).
2. Successful completion of the area examinations.
3. Completion of 10 courses in chemistry at the 200 level with a grade of B or better in each.

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 of 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 two foreign languages from among the three: Russian, German, and French.

1. *Residence.* As many as three of the six quarters of 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 initial enrollment.

A series of monthly cumulative examinations, more closely oriented toward current chemical research, are also taken, beginning in the second quarter of residence. The cumulative examination requirement—completion of four successful examinations—must be met by the end of the fifth quarter of residence.

An oral examination on original research propositions, and on the student's thesis research topic, is given in the quarter 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 first oral examination, one reexamination is permitted within three months of the first.

Students must achieve admission to candidacy before the beginning of their third year 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 usually result in a smaller number of specified courses for the student.

4. *Foreign Language Requirements.* These requirements may be met by passing the final examination in *Russian* 2C, *German* 2C, or *French* 2C, or an equivalent special examination administered by the Department of Foreign Languages and Literatures.

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 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 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.

■ 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 California. It is designed to be compatible with curricular structures at other collegiate institutions in California. Students transferring to UCI will, therefore, not find it difficult to continue their programs of mathematics study.

Students at UCI are able to earn the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy in Mathematics.

Freshman-sophomore courses are of two kinds: a) Courses preparatory to advanced work in the exact sciences and engineering: modern treatments of calculus and analytic geometry and algebra (vector spaces and matrices); b) courses for students whose major interests lie outside the exact sciences and engineer-

ing: a one-year liberal arts course in mathematics to be augmented by low-prerequisite courses in the areas adjacent to economics, statistics, biology, and psychology.

Junior-senior courses are also of two kinds: a) Courses that form links in a chain connecting freshman-sophomore courses to graduate work in mathematics: advanced calculus, function theory, elementary modern algebra, geometry and topology, probability and statistics, and differential equations; b) courses for advanced students in physics, chemistry, engineering, and statistics: applied mathematics, e.g., ordinary and partial differential equations, Fourier and Laplace transforms, calculus of variations, numerical analysis, computer science, and advanced statistics.

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.

The Master of Arts in Mathematics

The Master's degree programs will serve a dual purpose: a) for some they will serve as terminal programs of mathematical education; b) for others they will 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 will be offered under Plans I and II. There will be no specific course requirements for either the Master's degree or the Doctor of Philosophy degree. On the other hand, demonstrated competence and knowledge of algebra, analysis, and geometry/topology will be required for these degrees. 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, and Russian, is required. Ph.D. candidates must demonstrate competence in two of these languages.

Plan I will require the equivalent of the successful completion of at least eight quarter 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.

The Doctor of Philosophy in Mathematics

The Doctor of Philosophy degree will require successful completion of a program of courses, seminars, and individual study that will prepare a candidate for a career in mathematical research. He will be expected to have breadth in that he will be required to demonstrate advanced knowledge and competence in algebra, analysis, and geometry/topology. He will be expected to have depth in that he will be 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 will be 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.

The examinations for predoctoral students will be 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 will be 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, will decide on admission of students to candidacy, and then guide and supervise candidates through their research, study, and writing for the Doctor of Philosophy degree.

■ 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 four 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 foundations 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.

The Master of Arts in Physics

The requirements for the M.A. degree are three quarters of residence and mastery of the material covered in five one-year course sequences: 111-112-113 (mechanics and thermodynamics), 131-132-133 (modern physics), 212ABC (mathematical physics), 213ABC (electromagnetic theory), and 215ABC (quantum mechanics). Proficiency in the undergraduate course material must

be demonstrated by passing a written comprehensive examination given in the spring. Proficiency in the graduate course material may be demonstrated by passing the courses or final examinations in the courses with an average grade of 2.5 or better, or 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, admission to candidacy, 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. *Admission to candidacy.* For admission to Ph.D. candidacy, a student must pass a comprehensive examination on undergraduate physics in his first year of graduate work, and later a Ph.D. qualifying examination. The qualifying examination will consist of a six-hour written test, followed within one week by a two-hour oral test, and may be taken at any time of the year. Upon application to the department by the student, a committee of three will be appointed to prepare a suitable set of problems for the written test, and to conduct an oral probe of the student's ability to correlate his knowledge of physics and to apply it to new physical problems such as will be necessary in research. Students should make known to the department what branch of physics they find most attractive for thesis research so that the committee may contain a representative from that area, but otherwise the composition of the committee is at the discretion of the department. The committee is free to modify the length of the examination if, in their judgment, special conditions warrant it.

This qualifying examination will be designed to test the competence of the student in the subject matter of the graduate courses on mathematical physics, electromagnetic theory, and quantum mechanics. Passage of the examination will require a degree of proficiency in these areas equivalent to that needed to obtain a B in the courses, and an equivalent level of understanding of the intimate relationships among these subjects. A student will be automatically permitted to attempt to pass the examination a second time if he is not successful the first time. A third attempt will not be permitted unless a departmental committee finds that

the results of the second attempt were inconclusive because of extraordinary circumstances.

Students must achieve admission to candidacy before the beginning of their third year 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, six graduate-level courses (e.g., two three-course sequences) other than *Mathematical Physics, Electromagnetic Theory,* and *Quantum Mechanics.* This is a breadth requirement intended to insure that the Ph.D. student be acquainted with branches of physics apart from the area of his dissertation research.

4. *Foreign Language Requirement.* This requirement may be met by passing the final examination in *Russian* 2C, *German* 2C, or *French* 2C, or an equivalent special examination administered by the Department of Foreign Languages and Literatures.

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 a committee consisting of his research supervisor, three members of the Physics Department, and a member of the department in which the student has taken his minor degree (if any). The student will be examined on the contents of the dissertation and on topics in branches of physics which are related to the subject matter of the dissertation.

Courses of Study

■ *Chemistry*

Undergraduate Courses

1A-1B-1C *General Chemistry* (1-1-1) fall, winter, spring
A broad introduction to the principles of chemistry, emphasizing the theoretical foundations of chemical study. The accompanying laboratory course strongly emphasizes the use of quantitative measures in chemical experiments, including both gravimetric and volumetric analysis.

11A-11B-11C *Honors General Chemistry* (1-1-1) fall, winter, spring
A special course covering the same area as *Chemistry* 1ABC, but especially designed for the student with superior ability and preparation. Admission by permission of the department.

51A-51B-51C *Organic Chemistry* (1-1-1) fall, winter, spring
Development of fundamental concepts relating to carbon compounds with emphasis on structural theory and the nature of chemical bonding, stereo-chemistry, 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. Prerequisite: One year of general chemistry.

131A-131B-131C *Physical Chemistry* (1-1-1) fall, winter, spring
Prerequisites: One year of general chemistry; one year of calculus; one year of physics.

151 *Instrumental Methods Laboratory* (1) spring
Prerequisites: One year of organic chemistry and one year of physical chemistry.

180 *Undergraduate Research* (1) fall, winter, spring
Prerequisites: One year of organic chemistry; one year of physical chemistry; and permission of the department.

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)
Not offered in 1966-67.
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)
Not offered in 1966-67.
280 *Research:* Organic Synthesis, Reaction Kinetics, Radiochemistry, Theoretical Chemistry, Physical Organic Chemistry, Inorganic Chemistry, Physical Chemistry of Macromolecules (½ to 3)
290 *Seminar*

■ *Mathematics*

FRESHMAN-SOPHOMORE COURSES

1A *Introductory Mathematics* (1) fall, winter, spring
An intensive course in algebra and trigonometry for those seeking admission to the calculus sequence. Prerequisite: One year high school algebra; one year high school geometry.

2A-2B-2C *Calculus* (1-1-1)
Begins each quarter. An integrated treatment of calculus and analytic geometry in which the subjects of differentiation, integration and power series expansion of functions of a single real variable are discussed together with applications of these topics. Prerequisite: 1A or two years high school algebra; one year high school geometry; one-half year trigonometry.

3A-3B-3C *Calculus and Linear Algebra* (1-1-1)
Begins each quarter. 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 as an art. Prerequisite: One year high school algebra, one year high school geometry.

5A-5B-5C *Special Course for Social Science Students*
Covers probability theory, calculus, and elementary statistics. There is no prerequisite.
5A — *Finite probability* (1) fall
5B — *Differential and Integral Calculus* (1) winter
5C — *"Continuous" Probability* (1) spring

6A-6B-6C *Linear Algebra, Differential Equations, and Numerical Methods* (1-1-1) fall, winter, spring
6A — Linear algebra, linear programming, matrix theory.
6B — Differential equations, difference equations, approximation methods.
6C — Numerical methods.
Prerequisite: 5A-5B-5C.

JUNIOR-SENIOR COURSES

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

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

134A-134B-134C *Accelerated Course for Social Scientists* (2-2-2) fall, winter, spring
A compressed course encompassing the subjects taught in 5A-5B-5C and 6A-6B-6C. No prerequisite.

140A-140B-140C *Advanced Calculus and Elementary Analysis* (1-1-1) fall, winter, spring
Prerequisite: 100A-100B-100C.

150A-150B-150C *Set Theory and Mathematical Logic* (1-1-1) fall, winter, spring
Prerequisite: 140A-140B-140C.
170 *Biostatistics* (1), fall or winter or spring
180A-180B-180C *Topics in Mathematics for Social Scientists* (1-1-1) fall, winter, spring
Prerequisite: Special course in mathematics for social scientists, parts 1 and 2, or *Mathematics* 130 ABC.

GRADUATE COURSES

210A-210B-210C *Real Analysis* (1-1-1) fall, winter, spring
Prerequisite: 140A-140B-140C.
220A-220B-220C *Analytic Function Theory* (1-1-1) fall, winter, spring
Prerequisite: 140A-140B-140C.
230A-230B-230C *Algebra* (1-1-1) fall, winter, spring
Prerequisite: 120A-120B-120C.
239A-239B-239C *Representation Theory* (1-1-1) fall, winter, spring
Prerequisite: 230A-230B-230C.
240A-240B-240C *Differential Geometry* (1-1-1) fall, winter, spring
Prerequisite: 110A-110B-110C or 140A-140B-140C.
250A-250B-250C *Topology* (1-1-1) fall, winter, spring
Prerequisite: 110A-110B-110C.
260A-260B-260C *Functional Analysis* (1-1-1) fall, winter, spring
Prerequisite: 210A-210B-210C; 220A-220B-220C.
261A-261B-261C *Operator Theory* (1-1-1) fall, winter, spring
Prerequisite: 210A-210B-210C or 220A-220B-220C.
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
Prerequisite: 210A-210B-210C.
290A-290B-290C *Ordinary Differential Equations* (1-1-1) fall, winter, spring
Prerequisite: 100A-100B-100C; 120A-120B-120C; 210A-210B-210C.

■ *Physics*

FRESHMAN-SOPHOMORE COURSES

Physics 3 is a one-year course suitable for pre-medical students, 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 3B and 3C.

Physics 5 is an intensive five-quarter course for physics, chemistry and engineering students and other students interested in a careful quantitative approach to the subject. Laboratory work accompanies 5A, 5B, 5C, and 5D.

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
Special theory of relativity; wave phenomena. Prerequisite: *Physics* 5A. Corequisite: *Mathematics* 2C.

5C *Fundamental Physics III* (1) fall
Optics; thermodynamics. Prerequisites: *Mathematics* 2ABC, *Physics* 5B.

5D *Fundamental Physics IV* (1) winter
Electromagnetism. Prerequisite: *Mathematics* 2ABC, *Physics* 5C. Corequisite: *Mathematics* 3.

5E *Fundamental Physics V* (1) spring
Quantum theory; atoms and nuclei. Prerequisites: *Mathematics* 2ABC, *Physics* 5D. Corequisite: *Mathematics* 3.

Junior-Senior Courses

Courses numbered between 100 and 109 are second-level courses primarily for non-science 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
Development of the quantum theory; atomic structure and atomic reactions; interpretation of spectra. Prerequisite: *Physics* 3ABC.

102 *Nuclear Phenomena* (1) winter
Radioactivity; nuclear structure; nuclear reactors and nuclear explosions; stellar energy. Prerequisite: *Physics* 3ABC.

103 *Contemporary Physics* (1) spring
A study in detail of the evolution of some key ideas in contemporary thinking about nature. Prerequisite: *Physics* 101 or 102.

104 *The Solar System*
Not offered in 1966-67.

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

112 *Statistical Mechanics* (1) winter
Prerequisites: *Physics* 5C, *Physics* 111. Corequisite: *Mathematics* 3.

113 *Thermodynamics* (1) spring
Prerequisite: *Physics* 112. Corequisite: *Mathematics* 3.

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

115 *Optics* (1) winter
Prerequisites: *Physics* 5D, *Mathematics* 3 ABC.

116 *Quantum Theory* (1) spring
Prerequisites: *Physics* 5E, *Mathematics* 3ABC.

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)
Not offered in 1966-67.

135 *Plasma Physics* (1).
Not offered in 1966-67.

151 *Advanced Laboratory I* (1) winter
Atomic and plasma physics. Prerequisite: *Physics* 5E.

152 *Advanced Laboratory II* (1) spring
Optics and microwaves. Prerequisite: *Physics* 5D.

153 *Advanced Laboratory III* (1)
Solid state and low temperature physics. Prerequisite: *Physics* 5E. Not offered in 1966-67.

154 *Advanced Laboratory IV* (1)
Nuclear physics. Prerequisite: *Physics* 5E. Not offered in 1966-67.

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) Not offered in 1966-67.

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) fall, winter

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

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

222A-222B *Nuclear Theory* (1-1) fall, winter

223 *Elementary Particle Physics* (1) spring

224 *Atomic and Molecular Physics*
Not offered in 1966-67.

225 *Plasma Physics*
Not offered in 1966-67.

232 *Applications of Group Theory*
Not offered in 1966-67.

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

260 *Special Topics in Physics* (1)
This course is designed to acquaint students with the basic concepts and methods underlying current research activity in a selected branch of physics. The topics may change as rapidly as quarterly, and this course, therefore, may be taken several times for credit. The course may be directed primarily toward experimental or theoretical investigations, depending upon the research area under consideration. Topics to be discussed will be announced at the beginning of each quarter. Sample areas are: liquid helium, superconductivity, plasma waves and instabilities, general relativity and gravitation, space and atmospheric physics, astrophysics and stellar structure, elementary particle theory, nuclear structure, and many-body problems.

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, general relativity, and the physics of quantum electronics.

299 *Reading on 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 FACULTY

JAMES G. MARCH, *Professor of Psychology and Sociology and Dean of the Social Sciences*

DOUGLAS M. AMEDEO, *Acting Assistant Professor of Geography*

KATHLEEN ARCHIBALD, *Acting Assistant Professor of Sociology*

DURAN BELL, *Assistant Professor of Economics*

INGEBORG P. BELL, *Assistant Professor of Sociology*

ARNOLD BINDER, *Professor of Psychology*

ISABEL M. BIRNBAUM, *Assistant Professor of Psychology*

JOHN P. BOYD, *Acting Assistant Professor of Anthropology*

MYRON L. BRAUNSTEIN, *Assistant Professor of Psychology*

ROBERT J. CALATRELLO, *Lecturer in Education*

DOUGLAS K. CHALMERS, *Assistant Professor of Psychology*

CHARLES F. CNUDDE, *Acting Assistant Professor of Political Science*

MICHAEL COLE, *Associate Professor of Psychology*

LYMAN DRAKE, *Acting Assistant Professor of Political Science*

JULIAN FELDMAN, *Associate Professor of Psychology and Information and Communication Science and Associate Dean of the Social Sciences. Sabbatical Leave, 1966-67 academic year*

GORDON J. FIELDING, *Assistant Professor of Geography and Administration*

BARBARA K. FOLEY, *Assistant Professor of Sociology*

LEWIS A. FROMAN, JR., *Associate Professor of Political Science*

ALAN E. GROSS, *Acting Assistant Professor of Psychology and Sociology*

JOE TRUMAN HART, *Assistant Professor of Psychology*

SHEEN T. KASSOUF, *Assistant Professor of Psychology*

JAMES A. KEARNS, *Lecturer in Administration and Information and Communication Science*

2 THE DIVISION OF SOCIAL SCIENCES

Graduate and undergraduate education in the Division of Social Sciences at UCI involve participation in an educational revolution. The program, faculty, and students differ substantially from conventional counterparts elsewhere. The specific details of those 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.

The educational programs have a double 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 anthropology, economics, geography, political science, psychology, and sociology.

Second, 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. Moreover, 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.

JEROME KIRK, *Assistant Professor of Sociology*

CHARLES LAVE, *Acting Assistant Professor of Economics*

JEAN LAVE, *Acting Assistant Professor of Anthropology*

MARTIN A. LEVIN, *Acting Assistant Professor of Political Science*

DUANE METZGER, *Acting Associate Professor of Anthropology*

ALAN J. MILLER, *Assistant Professor of Psychology*

DEANE E. NEUBAUER, *Assistant Professor of Political Science*

JACK W. PELTASON, *Professor of Political Science and Vice-Chancellor for Academic Affairs*

KARL B. RADOV, *Acting Assistant Professor of Economics*

MARTIN M. SHAPIRO, *Associate Professor of Political Science*

RICHARD C. SNYDER, *Professor of Political Science and Administration and Dean of the Graduate School of Administration*

VOLNEY STEFFLRE, *Assistant Professor of Anthropology and Psychology*

FRED M. TONGE, *Associate Professor of Administration and Information and Communication Science and Director of Computer Facilities*

RICHARD E. WAGNER, *Assistant Professor of Economics*

JOHN WALLACE, *Acting Associate Professor of Psychology and Administration*

JOHN C. WEICHER, *Acting Assistant Professor of Economics*

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.

Graduate Programs

The Division offers instruction leading to the Ph.D. degree. The degree programs are restricted to full-time students and emphasize preparation for research and academic careers in the disciplines involved.

In recent years it has become increasingly clear that the traditional boundaries among anthropology, economics, geography, political science, psychology and sociology are not always the most convenient boundaries for the research and teaching undertaken by social scientists. For instance, those social scientists focusing on such problems as organizations, choice, conflict, urban affairs, or public policy analysis are likely to find such boundaries irrelevant. This problem has long been signaled by the existence at major universities of such dual-title graduate programs as those in political economy and social psychology. There would seem to be no purpose, however, in multiplying and recombining titles endlessly. Therefore, while Ph.D. programs in several of the individual disciplines will be introduced within the coming year, the Division chooses to initiate its graduate training with a program leading to the Ph.D. in Social Science. This program will not pretend that there is a single fixed body of knowledge that all social scientists must master, nor will it serve as a cover for any particular methodological orthodoxy. Rather, it is designed to allow each graduate student to work out for himself, in close conjunction with at least three members of the faculty, a course of study resulting in the mastery of a coherent body of empirical

and theoretical knowledge which can serve as the basis for further creative and fruitful teaching and research. Depending on the student's interests, such a program may range quite widely across disciplines, or resemble the traditional one discipline plus outside field type of arrangement found at most universities.

The faculty envisions a student's Ph.D. program to be of approximately three to four years' duration. The student will devote the first year to the explorations and preparation necessary to defining and mastering a coherent field of study. He will continue this preparation into the second year, during the course of which he will also submit a dissertation proposal. The third year will normally be devoted to dissertation research and writing. In some instances, of course, pre-dissertation work will require more than two years, and especially those dissertations demanding extensive field research may require more than one year to complete. In addition, all students will be expected to acquire mathematical and language tools appropriate to their studies. For the mathematical requirements, see the section on "Mathematics and Social Science" below.

Artificial administrative barriers will not be created between the social science and more particular degree programs. Transfers from social science to the individual disciplines and vice versa will be encouraged when they are appropriate and convenient to the student's research and teaching plans.

Applications for admission to the prospective Ph.D. programs in economics, psychology, political science and sociology are also welcomed. None of these programs anticipate elaborate field and course requirements of the sort frequently encountered so that detailed statements of requirements are unnecessary. Each will involve preparation in the basic areas of the individual discipline to be demonstrated by written and oral examinations normally during the first and second years of study. Each will involve the preparation of a dissertation under the direction of several members of the faculty. All of the disciplinary programs will encourage whatever degree of interdisciplinary work is compatible with a professional level of accomplishment within the basic discipline.

Undergraduate Programs

The Division of Social Sciences offers undergraduate degree programs in anthropology, economics, geography, political science, psychology, social science, and sociology. The programs are designed to provide terminal training in the social sciences; preparation for graduate work in one of the disciplines; preparation for professional training in administration, education, law, planning or social work; or preparation for elementary, secondary,

and junior college teaching (in conjunction with the Program in Teacher Education).

The undergraduate program in the Division is designed to help the student achieve six basic goals:

1. An understanding of the structure, limits, and uses of major techniques of analysis in the study of human behavior. For example, the student should be able to use intelligently basic theories of choice, exchange, adaptation, diffusion, and social structure.
2. Familiarity with the mathematical, computational, and statistical tools underlying modern social science. The student should be able to deal effectively with the fundamentals of calculus, difference and differential equations, linear algebra, computer programming, and statistics. See the section on "Mathematics and Social Science" below.
3. A basic knowledge of three different social science disciplines, including the discipline offered as the field of concentration. The candidate may choose any three of the six basic disciplines offered by the Division.
4. An extended knowledge of the institutions, data, concepts, methods, and analytic techniques of the discipline in which the degree is sought. The candidate should have a thorough grounding in the fundamentals of the discipline.
5. The ability to use knowledge in the field of concentration and the social sciences generally, to analyze a significant policy problem involving human behavior and to propose and justify a detailed approach to a solution.
6. The ability to participate in significant research in the discipline of concentration and to evaluate published research.

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 or informal instruction necessary to overcome these handicaps.

The Four-Year Program

The normal four-year undergraduate program follows a regular sequence in each of the social science disciplines. In each year the student has certain specific requirements he is expected to meet in the social sciences. During the freshman year, he is expected to acquire the key analytic tools of the social sciences and to start his collegiate study of mathematics. During the sophomore year, he continues mathematics, learns the basic content of three specific disciplines within the Division, and studies the experimental, field, and data analysis methods of social science.

During the junior year, he learns the more advanced material in the field of concentration and statistics. During the senior

year, he completes a substantial project in his major field. The program is supplemented each year by elective courses and other activities designed to satisfy outside requirements and the individual needs of the student.

The Division specifies its requirements in the form of knowledge gained rather than specific courses taken, and encourages students to satisfy the requirements by examination rather than necessarily through formal attendance in courses. Some students may find it helpful, however, to consider the following typical course program. The program is written for a student seeking a degree in psychology but can easily be adapted to others.

	FALL QUARTER	WINTER QUARTER	SPRING QUARTER
FRESHMAN	Social Science 1A Mathematics 5A Breadth requirement* Breadth requirement*	Social Science 1B Mathematics 5B Breadth requirement* Breadth requirement*	Social Science 1C Mathematics 5C Breadth requirement* Breadth requirement*
SOPHOMORE	Psychology 1** Mathematics 6A Information and Communication 1 Elective	Political Science 1** Mathematics 6B Elective Elective	Sociology 1** Mathematics 6C Elective Elective
JUNIOR	Psychology 100A*** Mathematics 130A Elective Elective	Psychology 100B*** Mathematics 130B Elective Elective	Psychology 100C*** Mathematics 130C Elective Elective
SENIOR	Psychology 190A*** Elective Elective Elective	Psychology 190B*** Elective Elective Elective	Psychology 190C*** Elective Elective Elective

*For a discussion of the general breadth requirements (the 6-3-3 requirements) see page 2. The normal program for majors in the Division satisfies the requirement of six courses in the Division of Physical Sciences through the mathematics requirement. Students must enroll in at least three courses in each of two of the three other divisions (i.e., Biological Sciences, Fine Arts, Humanities). These are minimal requirements; students are generally encouraged to take additional advanced work outside the major field.

**A student normally takes three of the six introductory courses (*Anthropology* 1, *Economics* 1, *Geography* 1, *Political Science* 1, *Psychology* 1, *Sociology* 1), including the course in his degree discipline.

****Psychology* 100A-100B-100C and 190A-190B-190C would be taken by a psychology major. *Geography* 100A-100B-100C and 190A-190B-190C would be taken by a geography major, etc.

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 programs 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 Division must do so before graduation (see the section on "Mathematics and Social Science").

Juniors planning to transfer into the Division 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 Division 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 Division by transferring in their senior year should plan their work carefully to ensure that the divisional 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 Division until he has passed the Junior Comprehensive Examination in his discipline and has completed the mathematical prerequisites for *Mathematics* 130A-C.

Academic Advisors

Each student majoring in a discipline within the Division is assigned to a faculty advisor on entry. Subsequent changes in advisors are made by the Dean 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.

Each advisor meets with his advisees regularly during the year in a General Seminar. The General Seminar provides an opportunity for students in the Division to engage in close intellectual exchange within a small group without the pressures of specific course content. In addition, members of each General Seminar select a representative to serve on the Divisional Student Cabinet. The Student Cabinet advises the Dean and the faculty, organizes student activities within the Division, and publishes a regular Divisional Newsletter.

Freshman Honor Seminars

Each year a small number of special one-year Freshman Honor Seminars (*Social Science* 5A-5B-5C) are offered by the Division. Each seminar is limited to fifteen freshmen. Permission to enroll in a Freshman Seminar is given by the instructor on the basis of a personal interview during Orientation Week. Each Freshman Honor Seminar provides a select group of first-year students an opportunity to develop their skills for understanding and elucidating a specific problem in the study of human behavior. Each student prepares and defends a substantial paper on the subject matter of the seminar.

Special Programs

Pre-graduate Training. Students planning to pursue graduate work in the social sciences enroll in the regular social science program in one of the disciplines. In addition, they should supplement their program by anticipating language requirements at major graduate schools and by intensive work in areas outside the Division that are of special relevance to their intended graduate work.

Information and Communication Science. A special interdivisional 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 one of the social science disciplines. Students particularly interested in business administration are usually advised to major in economics. Students interested in public administration are usually advised to major in economics or political science. In addition, the Division offers, in conjunction with the Graduate School of Administration, a special five-year program for select students leading to both a baccalaureate in one of 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 Division 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 Communication 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.

Students who wish to do so may substitute *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 enrolled in *Mathematics* 5A-5B-5C and *Information and Communication Science* 1 during their first year at UCI. Such students 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 requirements of the Division. 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; by a score of 600 on the quantitative part of the College Boards; or by passing an examination in algebra offered in September of each year. Students who wish to prepare themselves for the special examination on an individual basis can obtain counseling on self-instruction programs from the Division of Social Sciences.

Nonmajors

Students from other divisions or schools are encouraged to take courses within the Division of Social Sciences. Non-majors may be particularly interested in the following introductory courses:

Social Science 1A-1B-1C: *Introduction to Analysis*
Social Science 5A-5B-5C: *Freshman Honor Seminar*
Social Science 10A-10B-10C: *The American Society*
Anthropology 1: *Introduction to Anthropology*
Economics 1: *Introduction to Economics*
Geography 1: *Introduction to Geography*
Political Science 1: *Introduction to Political Science*
Psychology 1: *Introduction to Psychology*
Sociology 1: *Introduction to Sociology*

Each quarter some 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

The Division of Social Sciences has no great confidence in a college education that consists solely in regular attendance and grades in a specified list of courses, each lasting some multiple of one quarter. As a result, "courses" in the Division 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).

When the education is complete, the course is complete. Thus, a student may obtain credit through examination for any course in the Division for which he is otherwise eligible.

The Division schedules five types of courses:

General Introductory Courses. These courses (*Social Science* 1A-1B-1C and *Social Science* 10A-10B-10C) are intended to introduce any student to the analytical and descriptive material of social science. They are relatively conventional in format.

Core Courses. In each discipline in which a degree is offered within the Division (anthropology, economics, geography, political science, psychology, social science, sociology) a cluster of four core courses is listed. The educational activities involved in these courses include self-instructional activities (including reading), lectures, seminars, and individual discussions with faculty members and other students. The educational objectives are to give the student a knowledge of the major concepts, techniques, and results of the discipline. A student who is a candidate for a degree in the Division must pass a comprehensive examination covering the core material in his discipline before starting his senior year. A student who is a candidate for a degree in another division is also encouraged to participate in the core courses. These courses are numbered 1, 100A, 100B, and 100C in each discipline.

Special Topics Courses. To supplement the core disciplinary courses and to provide both majors and nonmajors with the experience of pursuing a subject in depth, the Division 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 such topics as "Cognitive Structure and Personality," "Regional Planning," "Social Bases of Politics," "Racial and Ethnic Differences in American Society." 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 180 in each discipline.

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 enrolling in an individual study course. Such courses are numbered 199 in each discipline.

Project Courses. Students who have the knowledge gained in the core disciplinary courses and have passed the junior comprehensive examination in the field may enroll in a senior project seminar within which they complete a substantial paper. The course is simply an administrative hook on which to hang the paper and the seminar. These courses are numbered 190A-190B-190C in each discipline. Select freshman students are also provided an opportunity to prepare a substantial paper in a Freshman Honor Seminar (*Social Science* 5A-5B-5C). Any student may, with faculty approval, undertake a project as an individual study (199) course.

■ *Anthropology*

Anthropology provides an historical and comparative framework for the study of the cultural aspects of man and society. This includes an understanding of the basic concepts, techniques, and data of ethnology, social anthropology, and linguistics. Emphasis is placed on the analysis and comparison of social and cultural systems and their various aspects: norm, status, and role; structure and function; polity, economy, ecology, and kinship; types of society; social change; values, knowledge, art, and religion; cultural differentiation and cultural history; language.

UNDERGRADUATE COURSES

1 *Introduction to Anthropology* (1) winter

100A-100B-100C *Advanced Anthropological Analysis I-II-III* (1-1-1) fall, winter, spring

180 *Special Topics* (1) fall, winter, spring
May be taken more than once.

190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination

199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Anthropology* (1-1-1) fall, winter, spring

280 *Special Topics* (1) fall, winter, spring

299 *Individual Research* (1) fall, winter, spring

■ *Economics*

Economics is the study of resource allocation by individuals, organizations, and nations. Descriptive economics includes the study of the manner in which these decisions are made and of the interactions among them. Normative economics considers how decisions should be made in order to achieve certain objectives. Some of the major topics considered are consumer behavior, business behavior, pricing, markets and market equilibrium, problems of optimization, business fluctuations, national income, economic growth and development, fiscal and monetary policy, inflation, welfare economics, economics of the public sector, industrial organization, labor economics, forecasting, and the quantitative analysis of economic data.

UNDERGRADUATE COURSES

1 *Introduction to Economics* (1) fall

100A-100B-100C *Advanced Economic Analysis I-II-III* (1-1-1) fall, winter, spring

180 *Special Topics* (1) fall, winter, spring
May be taken more than once.
190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination
199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Economics* (1-1-1) fall, winter, spring
280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring

■ *Geography*

Geography is the study of what places are like and how and why they attained their character. Traditionally both the physical and human processes contributing to place differentiation are studied. At Irvine emphasis is upon understanding how the human processes operate. Special attention is also given to the integration of techniques and knowledge of geography with other social sciences in the solving of major social problems.

UNDERGRADUATE COURSES

1 *Introduction to Geography* (1) spring
100A-100B-100C *Advanced Geographical Analysis I-II-III* (1-1-1) fall, winter, spring
180 *Special Topics* (1) fall, winter, spring
May be taken more than once.
190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination
199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Geography* (1-1-1) fall, winter, spring
280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring

■ *Political Science*

Political Science involves study of the problems of politics and the institutions which have evolved in response to those problems. The primary focus is (1) on the behavior of major participants in the political process: voters, parties, political leaders, legislatures, courts, public opinion, pressure groups, administrators; and (2) on the way in which politics resolves conflict, organizes social action, and mediates social change. The interactions between politics and the economic systems (political economy)

and between politics and the social system (political sociology) are emphasized. Empirical studies of political behavior are used as the basis for both analysis of political institutions and for the investigation of current political problems.

UNDERGRADUATE COURSES

1 *Introduction to Political Science* (1) winter
100A-100B-100C *Advanced Political Analysis I-II-III* (1-1-1) fall, winter, spring
180 *Special Topics* (1) fall, winter, spring
May be taken more than once.
190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination
199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Political Science* (1-1-1) fall, winter, spring
280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring

■ *Psychology*

Psychology is the study of behavior, including psychophysics, sensation, perception, learning, decision making, problem solving, concept formation, verbal behavior, individual development, motivation, personality, abnormal behavior, emotion, language, influence, attitudes, and social behavior. Particular emphasis is placed on quantitative analyses of behavior, and students are encouraged to explore the interdisciplinary boundaries of psychology by taking courses in such fields as engineering, psychobiology, and sociology. Student projects include experimental studies, investigation of mathematical and computer models of behavior, and quantitative analysis of psychological data.

UNDERGRADUATE COURSES

1 *Introduction to Psychology* (1) fall
2 *Experimental Psychology* (1) winter
100A-100B-100C *Advanced Psychology I-II-III* (1-1-1) fall, winter, spring
180 *Special Topics* (1) fall, winter, spring
May be taken more than once.
190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination
199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Psychology* (1-1-1) fall, winter, spring
280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring

Social Science

The study of social science—as distinct from the study of the individual disciplines of anthropology, economics, geography, political science, psychology, and sociology—is the study of phenomena or techniques of analysis that are not easily contained within one of the conventional disciplines. Enrollment in upper division and graduate courses is limited to students with strong interests in a well-defined interdisciplinary field.

UNDERGRADUATE COURSES

1A-1B-1C *Introduction to Analysis I-II-III* (1-1-1) fall, winter, spring
5A-5B-5C *Freshman Honor Seminar I-II-III* (1-1-1) fall, winter, spring
Admission by interview.
10A-10B-10C *The American Society I-II-III* (1-1-1) fall, winter, spring
100A-100B-100C *Advanced Analysis I-II-III* (1-1-1) fall, winter, spring
180 *Special Topics* (1) fall, winter, spring
May be taken more than once.
190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination
199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Social Science* (1-1-1) fall, winter, spring
280 *Special Topics* (1) fall, winter, spring
299 *Individual Research* (1) fall, winter, spring

■ *Sociology*

Sociology includes the study of the basic elements of sociological analysis—social interaction, values, roles, social structure; the fundamental human groupings of primary relationships (e.g., the family), organizations (e.g., bureaucracies), communities (e.g., megalopolis), institutions (e.g., religion), masses (e.g., mobs), and stratified groups (e.g., social classes); and the basic problems of social change, social control, and social tension. Sociological analysis utilizes both sociological theory and the data obtained by such

empirical techniques as sample surveys, laboratory experiments, social statistics, and field observations. Students are encouraged to engage in projects involving the application of sociology to other areas—for example, sociological history, sociology of the arts, sociology of science.

UNDERGRADUATE COURSES

1 *Introduction to Sociology* (1) spring

100A-100B-100C *Advanced Sociological Analysis I-II-III* (1-1-1) fall, winter, spring

180 *Special Topics* (1) fall, winter, spring
May be taken more than once.

190A-190B-190C *Senior Project I-II-III* (1-1-1) fall, winter, spring
Prerequisite: Junior Comprehensive Examination

199 *Individual Study* (1) fall, winter, spring
May be taken more than once.

GRADUATE COURSES

200A-200B-200C *Proseminar in Sociology* (1-1-1) fall, winter, spring

280 *Special Topics* (1) fall, winter, spring

299 *Individual Research* (1) fall, winter, spring

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. The Subject A examination is given for all incoming students once in April and again at the beginning of each quarter. There is a $5.00 fee for the examination.

THE FACULTY

ROBERT MALLOUGH SAUNDERS, *Professor of Electrical Engineering and Dean of the School of Engineering*
CASPER BARNES, JR., *Associate Professor of Electrical Engineering*
NEIL J. BERSHAD, *Assistant Professor of Electrical Engineering*
DAVID ISAACS, *Assistant Professor of Electrical Engineering*
NATHAN RYNN, *Professor of Electrical Engineering and Physics*
ROLAND SCHINZINGER, *Assistant Professor of Electrical Engineering*
DONALD FEUERSTEIN, *Acting Assistant Professor in Civil Engineering*
JACK SKLANSKY, *Associate Professor of Electrical Engineering*

2 THE SCHOOL OF ENGINEERING

The School of Engineering offers junior-senior programs of study intended to provide graduates with the tools requisite to the practice of engineering in industry and government after a short internship. The various programs 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 provide for the continued updating of their technological knowledge in the presence of a very rapidly expanding technology and the changing needs of society. It is expected that the programs, which include work in the humanities, social sciences, and fine arts, will contribute to each student's awareness of the world around him.

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 interests. 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 particular engineering discipline under study; 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 arts, humanities, and the social sciences. Engineering subjects will comprise the remaining 40%.

At the graduate level, programs of study become less and less structural the farther one goes. The M.S. program will require a certain number of 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 offered. At the Ph.D. level the program is still less structured than at the M.S. level. No courses are required; students must demonstrate competence at various points along the line toward the doctorate.

Admission

High school students wishing to begin their engineering programs at the University of California, Irvine, should seek admission to the College of Arts, Letters, and Science, whose admission requirements are stated elsewhere in this catalogue. Upon registering in the College of Arts, Letters, and Science, students will be assigned engineering advisors who will assist them in developing a satisfactory program of study and will provide the requisite advice during their freshman and sophomore years.

Junior students are admitted to the School of Engineering upon completion of a freshman-sophomore program either in the College of Arts, Letters, and Science at Irvine, at another campus of the University of California, or at one of California's junior or state colleges. Students seeking admission to the School of Engineering must satisfy the University requirements for admission to advanced standing, 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.

Undergraduate Programs

Since Irvine freshmen and sophomores will be enrolled in the College of Arts, Letters, and Science, they will be expected to follow a program in one of the divisions of the College. 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. The suggested programs in the divisions of Social Sciences and Physical Sciences can meet the science and mathematics requirements for the junior courses in engineering. All other matters being equal, the faculty recommend that engineering majors elect to take one year of chemistry and two years of the social sciences. 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 year. Students in junior colleges may wish to elect engineering courses in the freshman and sophomore years, and these are highly recommended if there is some doubt about their transfer to the Irvine campus. *Since UCI elects not to offer freshman and sophomore courses in engineering subjects, and since other campuses do, students majoring in one of the divisions at Irvine will be ineligible in general for transfer to another campus of the University for upper division work in engineering.* 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 includes two courses in engineering and one in mathematics running throughout the year. Since some students will be entering their junior year without having had a course in digital computer 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. A single required engineering course in the senior year is *Optimization Theory.* Students will be expected to make a choice between a mathematics and a physics course in the senior year. There is also a two-course opening in the program so that students may elect any two courses in the University if they so desire. Students in the School of Engineering should bear in mind the general campus policy which permits them to take courses in noncontiguous areas on a "pass-fail" basis. Noncontiguous areas with respect to engineering are all those except physics and mathematics.

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 advisors so as to maximize the educational experience offered by the Irvine campus. It should be emphasized that students are responsible for planning their own programs and for satisfactory completion of the graduation require-

ments; the faculty stand ready to give every assistance.

Table 1 and Figure 1 summarize two suggested programs of study for engineering students; others are equally acceptable as long as they meet the graduation requirements for the School of Engineering.

TABLE 1 / Typical Programs of Study

Physical Sciences Stem		*Social Sciences Stem*	
FRESHMAN YEAR (COLLEGE OF ARTS, LETTERS, & SCIENCE)			
Math 2A, 2B, 2C	3 courses	*Math* 2A, 2B, 2C	3 courses
Physics 5A, 5B	2 courses	*Physics* 5A, 5B	2 courses
Information & Communication Science 1	1 course	*Information & Communication Science* 1	1 course
Chemistry 1A, 1B, 1C	3 courses	*Social Sciences* 1A, 1B, 1C	3 courses
Electives*	3 courses	Electives**	3 courses
	12 courses		12 courses
SOPHOMORE YEAR (COLLEGE OF ARTS, LETTERS, & SCIENCE)			
Math 3A, 3B, 3C	3 courses	*Math* 3A, 3B, 3C	3 courses
Physics 5C, 5D, 5E	3 courses	*Physics* 5C, 5D, 5E	3 courses
Electives*	6 courses	Anthropology 1, Economics 1, Political Science 1, Psychology 1, Geography 1, Sociology 1	3 courses
	12 courses	Electives***	3 courses
			12 courses

JUNIOR YEAR (SCHOOL OF ENGINEERING)	
Engineering 100A, 100B, 101A, 101B, 102, 103	6 courses
Engineering Electives	2 courses
Mathematics Electives (upper division)	3 courses
	11 courses

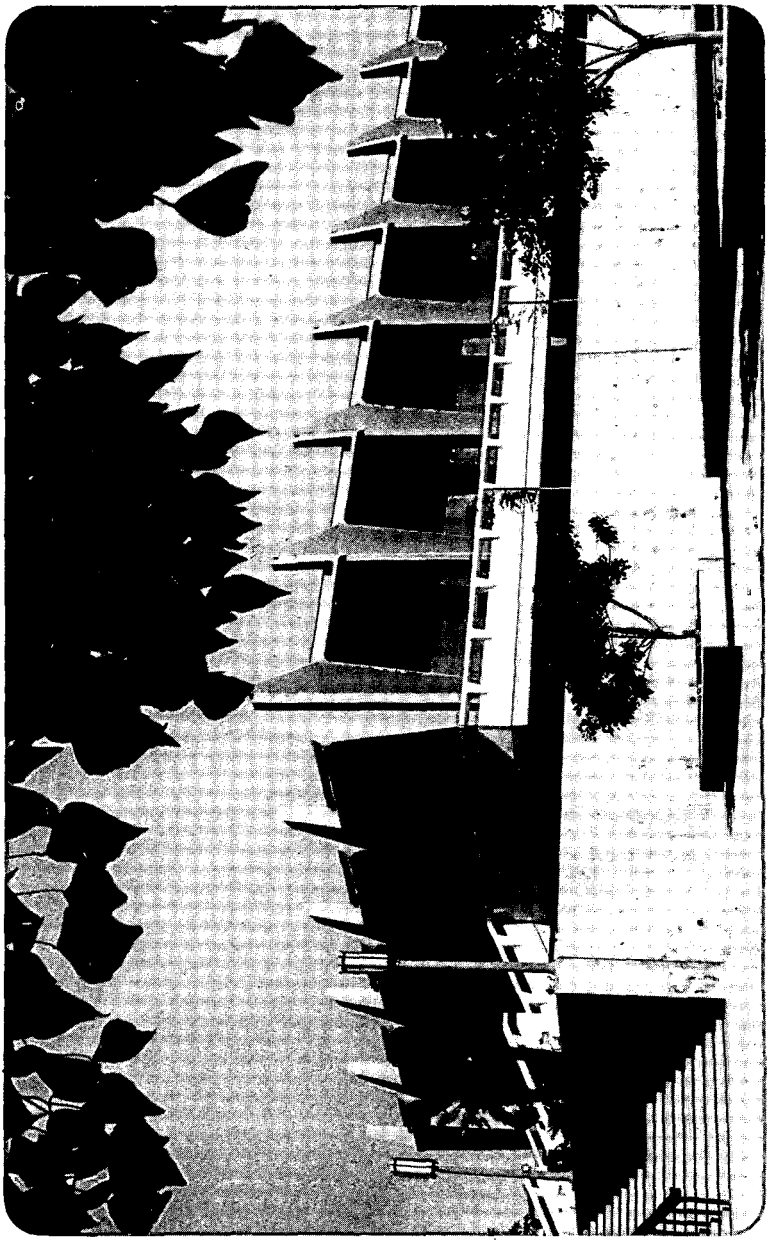
SENIOR YEAR (SCHOOL OF ENGINEERING)†	
Engineering 104A, 104B, 104C	3 courses
Engineering Electives	4 courses
Math or Physics Electives (upper division)	3 courses
	10 courses
TOTAL	45 courses

**In social sciences, humanities, or fine arts.*

***In humanities, or fine arts.*

†First offered in 1967-68.

****Must include at least one course in biology or chemistry.*



Graduation Requirements:

The faculty expects each student to meet the requirements of the University (listed under the College of Arts, Letters, and Science) and of the School of Engineering as follows:

1. Credit for 45 courses as follows:
   a. Engineering: 100A, 100B, 101A, 101B, 102, 103, 104A, 104B, 104C, plus six electives.
   b. Mathematics: Nine courses.
   c. Basic science (physics, chemistry, biology): eight courses from two sciences.
   d. Fine Arts, Humanities, and Social Science: nine courses; six in one division, three in another.
2. A grade average of at least C.
3. Credit for the final nine courses must be earned in residence on the Irvine campus.

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 specific courses is offered. All courses in the School are available for such proficiency demonstrations.

Graduate Programs

Graduate study in the School of Engineering permits students to delve into a subject in considerable depth while 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. Professional study concerned with the design and synthesis function of engineering is planned as a future program in the School.

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

instances, undertake remedial work which, if completed at the stipulated academic level, will enable them to be admitted to full graduate standing. For those seeking admission after July 1, 1966, the Graduate Record Examination will be required.

The Master of Science in Engineering

Those wishing to pursue graduate work in control system theory, plasma physics, quantum electronics, communication systems, digital computer systems, optimization theory, and water resources will find faculty prepared to offer courses and guide their research. The M.S. may be earned by following Plan I with thesis or Plan II without thesis; Plan II will require more course work than Plan I, and an extended paper on a suitable subject, and will involve a comprehensive examination. Students expecting to continue for the doctorate are advised to follow Plan I.

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. Approximately half of the courses required will be of graduate level and normally three courses will be expected to be taken in the Mathematics Department. 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 two 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 requirement demanded of all doctoral students; (4) research preparation including lan-

guages; 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.

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 preparing for a secondary and junior college teaching credential in engineering may follow the regular program for engineering majors. They complete their total program by electing courses that will satisfy the requirements for a secondary or junior college credential.

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 School of Administration. Students interested in engineering administration are usually advised to choose junior-senior courses in economics or political science as upper division electives.

Students in engineering who, at the completion of their junior year, satisfy all of the requirements for admission to the Graduate School of Administration except the Bachelor's degree, can apply for admission to the joint program in administration and engineering. This program permits superior students to earn a Master's degree in administration after five years rather than the usual six.

INFORMATION AND COMMUNICATION SCIENCE/ Both graduate and undergraduate students may participate in the courses and programs offered in this interdisciplinary area. Several members of the School hold joint appointments in Information and Communication Science. Students wishing to pursue a program of study at the graduate or undergraduate level should consult with them or with their advisors.

Courses of Study

100A-100B *Lumped Parameter Systems* (1-1) fall, winter. Prerequisites: *Physics* 5E, *Math* 3C, *ICS* 1 (may be taken concurrently).

101A-101B *Continuum Mechanics* (1-1) fall, winter. Prerequisites: *Physics* 5E, *Math* 3C, *ICS* 1 (may be taken concurrently).

102 *Signal Theory* (1) spring. Prerequisite: *Eng* 100B.

103 *Energetics* (1) spring. Prerequisite: *Eng* 101B.

104A-104B-104C *Optimization Theory* (1-1-1) fall, winter, spring Prerequisites: *Eng* 101A, 101B.
To be offered for the first time in the fall of 1967.

110A-110B *Physical Electronics* (1-1) winter, spring. Prerequisite: *Eng* 100A. Corequisite: *Eng* 100B.

111A-111B *Network Analysis and Synthesis* (1-1) winter, spring. Prerequisite: *Eng* 100A.

112A-112B-112C *Electronic Circuits* (1-1-1) fall, winter, spring.
To be offered for the first time in the fall of 1967.

120A-120B *Digital Computers* (1-1) winter, spring. Prerequisite: *Eng* 100A, *ICS* 1. Corequisite: *Eng* 100B.

125A-125B-125C *Information and Communication Theory* (1-1-1) fall, winter, spring

130A-130B-130C *Materials and Fields* (1-1-1) fall, winter, spring

140A-140B *Feedback Control Systems* (1-1) winter, spring
Prerequisite: *Eng* 100A. Corequisite: *Eng* 100B.

Graduate Courses

201A-201B-201C *Electromagnetic Theory* (1-1-1) fall, winter, spring

210A-210B-210C *Linear Optical Processes* (1-1-1) fall, winter, spring
Offered even-numbered years only.

211A-211B-211C *Quantum Electronics* (1-1-1) fall, winter, spring
Offered odd-numbered years only.

240A-240B-240C *Random Processes Automatic Control Systems* (1-1-1) fall, winter, spring. Offered odd-numbered years only.

241A-241B-241C *Optimization of Control Systems* (1-1-1) fall, winter, spring. Offered even-numbered years only.

298 *Group Seminars* (may be repeated each quarter)
298A *Programming Methods for Control Systems* (1-1-1) fall, winter, spring

299 *Individual Study or Research* (1) (may be repeated each quarter)

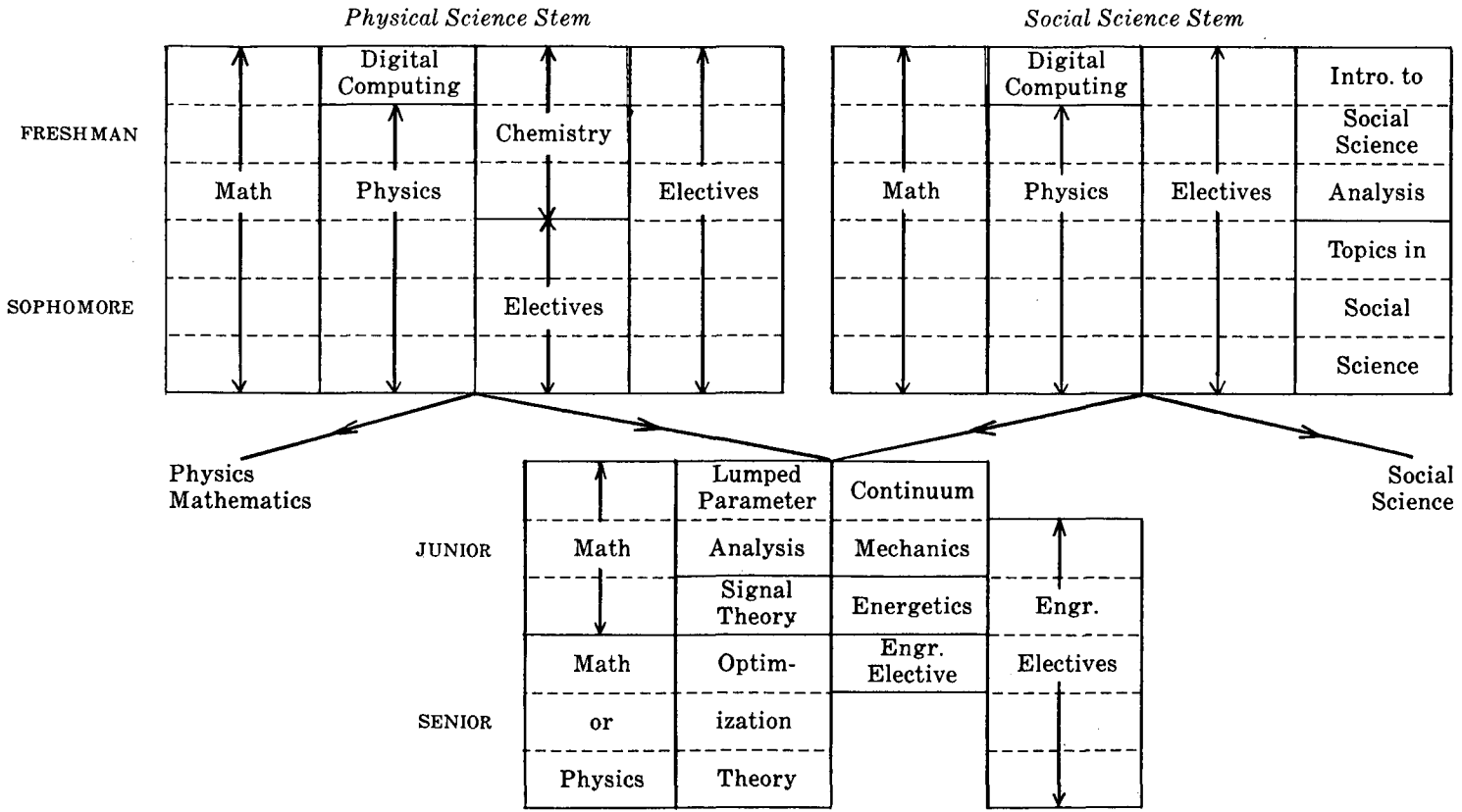


FIGURE 1. Typical programs of study for students majoring in engineering

2 THE GRADUATE DIVISION

R. W. GERARD
Dean of the Graduate Division

Graduate study is a major aspect of the academic activity of the University of California, Irvine. Appropriate graduate degrees at the Master's and Doctor's levels, both those emphasizing the creative arts and creative scholarship and those emphasizing technical proficiency, will be 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 disciplines 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 and the Graduate Council. Completion of work towards a Bachelor's degree, with adequate coverage and academic excellence, is a normal 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 Division, 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, will also be offered. Divisional and departmental statements should be examined for details.

■ THE DOCTOR OF PHILOSOPHY/This degree is awarded on the basis of evidence that the recipient possesses knowledge of a broad field of learning and expert mastery of a particular sector of it. It is not a reward for diligence but an indication of critical judgment, synthetic understanding, and imaginative creativity. The thesis is expected to demonstrate such abilities. Other Doctor's degrees, marking professional attainment, and with correspondingly different emphasis, will be offered after 1966-67.

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 Page 134 in the section entitled *Admission to the University.*

THE FACULTY

RICHARD C. SNYDER, *Dean of the Graduate School of Administration and Professor of Political Science and Administration*

JULIAN FELDMAN, *Associate Professor of Psychology and Information and Communication Science and Associate Dean of the Social Sciences.* Sabbatical leave 1966-1967.

GORDON J. FIELDING, *Assistant Professor of Geography and Administration*

STEPAN KARAMARDIAN, *Assistant Professor of Administration and Mathematics*

JAMES A. KEARNS, *Lecturer in Administration and Information and Communication Science*

JAMES G. MARCH, *Professor of Psychology and Sociology and Dean of the Social Sciences*

FRED M. TONGE, *Associate Professor of Administration and Director of Computer Facilities*

JOHN WALLACE, *Acting Associate Professor of Administration and Psychology*

THE GRADUATE SCHOOL OF ADMINISTRATION 2

INTRODUCTION/The Graduate School of Administration offers a program of advanced study through which individuals may prepare for significant roles in business or industry, in education, and in government. Among others, these roles include corporation managers, program directors, federal executives, state and local officials, urban planners, administrators for all levels of the educational system, organizational staff experts, political leaders, hospital administrators, managers of scientific or research enterprises, engineer-administrators, researchers, and faculty members. Two 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. 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 problems, whatever their specific organizational locale.

The kind of generalist who should emerge from this experience should also be a *specialist* in three respects: he should be equipped with appropriate and tested methods for handling particular technical problems (e.g., application of a systems approach to budgeting); 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 see the organizational phenomena and problems through the eyes of one discipline in which he has had enough work to command its distinctive perspective and methods.

The program is intended to increase the likelihood that future leaders will be able to communicate effectively and even to move easily from one kind of organizational unit to another, thereby providing society with versatile managers and administrators.

Apart from formal study devoted to the generalist and specialist aspect of future leadership roles, and apart from intellectual activities common to all degree candidates, it is expected that each individual will be responsible for tailoring his total two-to-four-year experience to his prior education, his present development, and future aspirations—in short, his own individuality.

A FULL-TIME PROGRAM/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 except in rare instances. The integrated program of study for the first year 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/or one who enrolls for not less than three courses or their equivalent. Exceptions to this policy may be granted only by the Dean. It should be noted, however, that UCI Extension offers a rich curriculum in areas bearing on administration.

■ EDUCATIONAL OBJECTIVES/In this age of rapid social change, including most dramatically the knowledge explosion, 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 capabilities, 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 must be exposed to and have the ability to use the following:

1. *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.
2. *Basic Techniques of Analysis, Decision Making, Problem Solving, Planning and Control of Operations:* Decision Theories; Operations Research; Systems Analysis; Budgeting, Accounting, and Personnel Policies; Experimental Techniques for Inducing Attitude and Behavior Changes; Computer Technology and Information Sciences; Economic Analysis; Research Design and Strategies.
3. *Major Conceptual and Empirical Foci:* Basic Concepts of Management; Organizational Anatomy, Physiology and Pathology, including Comparative Analysis and Interorganizational Relations; Levels and Units of Decision Making; Individual Behavior and Group Norms; Operating Environments of Organizations.
4. *General Knowledge: The Broader Context of Organization and Management.* The Mid-Twentieth Century (Significant Trends, Conditions, and Problems): Societies (Nature and Operation

of Social Systems); History of Science, Scientific Inquiry and Philosophy of the Social Sciences.

5. *Specific Knowledge of Particular Arenas of Administration.* Depth Study of Educational, Governmental, or Business-Industrial Organizations. (Subspecialties; for example, the administration of scientific and research enterprises will be encouraged.)
6. *General Skills.* Whether the source of such skills lies in intuitive experience or formal learning, political skills, effective management of interpersonal relations, leadership strategies and tactics, and competence in oral and written expression require explicit attention and effort.
7. *Professional Orientations.* Identification of factors, values, and rules which might bear on successful, responsible, and intellectually honest performance of organizational roles. Recognition of administrator's potential contributions to society and of ethical and moral problems which arise from social research and management of human enterprises.

LEARNING EXPERIENCES/ Courses or seminars are only some of perhaps a dozen learning experiences which will be available. Two principles ought to be underscored: first, the fundamental value of an apprentice relationship with the faculty; second, the necessity to learn by doing, whether in the field or in the laboratory.

The following are the major kinds of learning experiences which 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 method; simulation; oral and written expression; technical report writing; continuous 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 requires:

1. Either the Graduate Record Examination (aptitude and quantitative parts) or the Admission Test for Graduate Study in Business.
2. Subject matter preparation:
   a. mathematics through calculus.
   b. elementary social statistics, including correlational analysis, tests of significance and probability.

c. a basic course in economic analysis. (One year of introductory study.)
d. formal study of the principles and determinants of individual and group behavior with particular reference to social contexts and consequences. (One year of introductory study.)
e. foundations of political analysis; the aims and methods of describing and explaining political systems, institutions, and processes. (One year of introductory study.)

3. A previously prepared paper (research report, essay, case study) which may be indicative generally of the applicant's interests and capabilities.

Degree Programs

For the most part, degree requirements are stated in terms of meshing desired educational outcomes and related learning experiences rather than in terms of a number of courses or credit hours. The actual course of study will result from a combination of 1) a prescribed, common first year, 2) several kinds of specialization, and 3) maximum individual choice. 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, required studies may be exempted by examination or other forms of certification.

Although the M.S. degree is intended primarily for future practitioners, and the Ph.D. is intended primarily for future teacher-researchers, much of the intellectual foundation for both degrees is identical, and fundamental learning experiences are similar. A shift from one program to the other will be encouraged if a candidate's record and motivation justify such a change, and if additional time for acquisition of research skills can be afforded.

The Master of Science in Administration

This course of study will normally take two full academic years, including, for most candidates, related work during two summers. Beyond the required first-year program and the second-year continuing seminar in the area of specialization, electives may be chosen freely on the basis of criteria derived from an evaluation of the candidate's general preparedness in terms of the objectives of a professional degree. A problem paper, submitted during the third quarter of the second year, will be required before the degree will be recommended. The paper must constitute a rigorous exercise in the application of appropriate knowledge and skills to a real situation.

In addition to the two-year program for students who have already received a Bachelor's degree, outstanding UCI under-

graduate students may enter a cooperative "three-two" program with the Division of Social Sciences or the School of Engineering. Students in such a program will spend their first three years in Social Science or Engineering followed by two years in the Graduate School of Administration. Successful completion of requirements in this program leads to a Bachelor's degree in the cooperating field after the fourth year and a Master's degree in Administration after five years.

The Doctor of Philosophy in Administration

Given the objectives and educational activities associated with the Ph.D. degree, it seems likely that at least three and probably four years of approximately full-time effort will be required. Whether this time will all be spent "in residence" in the technical sense will depend in part on the pattern of in-service training and/or field research. Over and above the extensive preparation in core disciplines and areas of technical competence expected of future managers and administrators, the Ph.D. must qualify as a skilled researcher and complete a significant exercise demonstrating these skills. (See section below on First-Year Electives.)

Admission to candidacy for the Ph.D. degree will be on the basis of a qualifying examination, normally at the end of two years of full-time study. Included in the examination will be a research design for a dissertation project which must be defended and approved.

■ *Courses of Study*

First-Year Program
(All Degree Candidates)

The first-year program is designed to induce familiarity with and ability to select from and use effectively means, methods, and strategies for diagnosing and solving problems.

A. *Required*

200A, 200B, 200C *Foundations of Administration* (Credit equivalent of three courses per quarter or 12 units)

Note: The first year consists of two sequences, both describable either as a step-by-step technical preparation or a coherent interpretive framework for considering certain phenomena and problems. The two sequences will be coordinated. Sequences I and II will each require the expenditure of a concentrated five or six hours of formal meeting time. (While three courses—12 hours—is considered a normal load, the equivalent of a fourth course may be taken.) In addition to regular seminar assignments, directed browsing among major cases, research reports, basic books which systematize knowledge, and classics in organizational behavior

will be expected. Assessments of progress, sometimes in the form of examinations, will be made after each quarter segment of both sequences.

200A Fall Quarter

Agenda Setting (Weeks 1-4)

An Overview of Objectives and Problems to be Encountered. Basic Concepts and Problems of Management. Disciplinary and Interdisciplinary Perspectives on Organizations and Organizational Behavior. An Integrative Case (materials which will illustrate combinations of complex phenomena and different disciplinary perspectives will be analyzed every three or four weeks).

Sequence I: *Analytic and Quantitative Techniques* (Weeks 4-22)

Note: The purpose of this sequence is to provide initial working knowledge of relevant features of the following: calculus, algebra, probability and set theory, nature and uses of mathematical models, correlational and regression analysis, tests of significance, hypothesis testing, linear and dynamic programming, sequential decision making, introduction to electronic data processing, multiple educational and administrative uses of computers, experimental methods for bringing about attitude and behavior changes, and simulation and gaming.

1) Mathematics; 2) Statistics; 3) Optimization;
4) Computer Technology; 5) Budget and Accounting.

Sequence II: *Core Disciplines and Interdisciplinary Approaches* (Weeks 5-30)

Note: The purpose of this sequence is *not* to provide "short courses" in the core disciplines, but rather to sharpen and develop the ability to identify and apply appropriately relevant bodies of data, operational theories, analytic and problem-solving techniques, for example: politics of organizations, economic analysis, systems design and analysis, normative and empirical decision theories, et cetera.

1) Individual Factors (Psychology) Weeks 5-7;
2) Group Factors (Sociology, Social Psychology) Weeks 7-10.

200B Winter Quarter

Sequence I Continued (Weeks 11-20)

Sequence II

3) Organizational Factors — Economizing Processes (Economics) Weeks 11-15.
4) Organizational Factors — Political Processes (Political Science) Weeks 23-30.

200C Spring Quarter

Sequence I: *Analytic and Quantitative Techniques* Weeks 21-22 (termination)

Sequence I: *Laboratory and Experimental Techniques* Weeks 23-30.

6) Human Relations and Sensitivity Training (Weeks 23-26)
7) Simulation and Gaming (Weeks 27-30)

Sequence II:

5) Applications of Foundations to Problems (Weeks 21-30) Operations; Constituency Analysis; Financial Decisions; Administrative Processes; Leadership and Morale.
6) Integrative Cases (Weeks 28-30)

B. *Electives*

Given due consideration to prior preparation and to the consequences of the work load of *Foundations of Administration,* candidates are encouraged *to begin as soon as possible to intensify their study in a particular discipline* (economics, psychology, political science, sociology, mathematics, engineering, geography, etc.) *or in a particular supra-disciplinary technique or perspective* (for example, operations research or systems analysis).

Ph.D. candidates should begin at once to prepare themselves in research design and strategies. Formal courses might be chosen on the basis of their potential contribution to: Criteria of Design; Experiments; Factor Analysis; Sample Survey, Gross Data Analyses; Interviewing Techniques; Content Analysis; Participant-Observation; Natural Histories; Depth Studies versus Large Population Comparisons.

The Second-Year Program

Major Theme: Acquisition of Institutionally Specialized Substantive Knowledge.

A. *Required*

210A, 210B, 210C: *Continuing Seminar in Education, Business-Industry, and Government* (Equivalent of one course per quarter or 4 units)

Note: In effect, the Continuing Seminar will be divided into three sections, each led by one or more faculty experts. The sections will be devoted to an intensive exploration of a particular institutional pattern and its associated problems. Emphasis will be on a basic understanding of enduring structures and processes, as well as on change, environmental challenges, and emergent problems. All three quarters are required.

210A1, 210B1, 210C1: *Educational Administration*

Types of units and loci of decision. School systems as polities. Economics of education. Administrative and organizational issues. Interrelations of educational administration and learning. Special problems of higher education.

210A2, 210B2, 210C2: *Business and Industrial Management*
Theory of the firm. Non-economic factors in corporate activity. Markets, competition and conflict. Interrelations of organization and task. Problems of centralization, decentralization. New techniques of management. Large scale enterprises and social power. Business size and characteristics of operations—small versus big business.

210A3, 210B3, 210C3: *Administrative Behavior and Management Problems in Governmental Settings*
Public administration and the political process. Nature and operation of large scale public enterprises. Program development and implementation. Interlevel communication and coordination. Budgeting and objectives. Public-private interfaces. Mixed programs and systems of action. Evaluation of policy outcomes.

280A, 280B, 280C: *Advanced Study in Special Topics*
Each quarter a limited number of optional seminars will be offered by the Graduate School of Administration faculty. These seminars will be scheduled on the basis of program needs and availability of faculty time. Examples of possible foci: Interactions of Government and Business; Social Budgeting in Critical Policy Areas; Management of Research and Development; Organizational Problems of Urbanization; Regional Planning; The Economics of Education; Educational Leadership and the Political Process; New Techniques of Production Management.

299A, 299B, 299C: *Independent Reading*
Supervised reading chosen on the basis of individual need. Variable credit. Written critical evaluations of items read, as well as a paper, will be required.

Teaching Experience
Some time during the second year every degree candidate will engage in formal instruction, generally as a teaching assistant or as a resource person in connection with an established course or program of study. Opportunities may be found off campus. The length of time will depend on circumstances. Certification of minimal competence will be required though no grade or credit will be given.

B. *Electives*

During the second year courses might be selected which would serve the following purposes:

1. Additional study designed to strengthen grasp of mathematics, statistics, basic quantitative and qualitative techniques of analysis; decision making; and problem solving.
2. Continued depth experience in a single discipline.
3. Fulfillment of requirements in "general skills" and "professional orientations" as noted above.

SUMMER ACTIVITIES/The Graduate School of Administration regards summer work as essential to the maximum use of time over the two to four years normally needed to complete the M.S. or Ph.D. degree. During the first summer following the integrated *Foundations of Administration* course, it is expected that refresher training in basic skills and further exercises in application will be undertaken on the basis of assessments made throughout the regular academic year. Independent reading and laboratory or field projects will round out summer schedules.

JOINT DEGREE PROGRAMS/Subject to special qualifications on the part of candidates and to the meshing of requirements imposed by the degree granting divisions involved, joint degrees are possible and under certain circumstances, encouraged. However, it is understood that the attempt to satisfy simultaneously two sets of specifications makes sense only where there is sufficient overlap of preparation, requisite faculty supervision, and sufficient career motivation. Decisions to pursue a joint degree ought to be made early in the individual's program. Joint degrees will be possible in such areas as engineering, anthropology, economics, political science, psychology, sociology, and geography.

CONTINUING EDUCATION/From time to time the Graduate School of Administration will provide opportunities for advanced study in a variety of forms including short courses, symposia, post-doctoral fellowships, sabbaticals for representatives of government, education, and business. Some of these special programs will be offered in cooperation with UCI Extension (See Extension Bulletin); others will constitute a part of the regular academic program. Details can be secured either from the GSA or the UCI Extension Office. The number and content of continuing education activities will vary from year to year.

RESEARCH OPPORTUNITIES AND FACILITIES/In addition to possible participation in the research projects conducted by individual faculty members, degree candidates will have a chance to observe the diagnostic activities of the Graduate School of Administration's *Clinic for the Application of the Social and Behavioral Sciences to Organizations,* and to play a role in the *Orange County Laboratory for the Continuous Monitoring of Social Change.* Access to the UCI Computer Facility, to the Self-Instructional Laboratory, and to the experimental small groups and simulation laboratories, will complete the reservoir of "research technologies" available to the future manager, administrator, teacher, or researcher.

ROBERT J. CALATRELLO, *Lecturer in Education*

2 THE EDUCATION OF TEACHERS

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 internships designed to test educational theory in teaching and to develop professional attitudes.

Candidates for standard teaching credentials should plan to meet all preprofessional requirements as part of their undergraduate programs.

General education requirement: Seventeen courses, in addition to those required for the major, are required for all credentials. Elementary credential candidates must include course work in five of the following six areas; secondary and junior college credential candidates must include course work in four of the areas.

Humanities	Natural Sciences	Fine Arts
Social Sciences	Mathematics	Foreign Languages

All credentials require a year of English and demonstrated competence in composition.

Elementary credential candidates must also complete one course in the theory of the structure, arithmetic, and algebra of the real number system, or a course in calculus.

Major requirement: All candidates must complete a major which consists of at least nine 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 five courses.

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 interns and participation in accompanying lectures, seminars, field trips, and workshops.

Plans are now being developed so that after graduating and completing preinternship work, prospective teachers may be employed as paid, part-time teaching interns in cooperating public schools. Lectures, seminars, and clinics are to be designed to relate theory and practice. The student will be recommended for a teaching credential when he has demonstrated a satisfactory level of insight into educational problems and issues, the ability to apply pertinent knowledge in the analysis of learning, and the ability to guide the learning of others.

Students planning to teach in junior colleges will complete a Master's degree, concentrating in appropriate teaching fields. They may combine professional studies and a paid teaching internship in the year following attainment of the Master's degree.

There are certain course requirements for the secondary teaching certificate. The student must take either *Sociological Foundations of Education* or *History and Philosophy of Education.* He must take *Psychological Foundations of Education, Secondary School Curriculum and Organization,* and *Methods of Teaching in the Secondary School.* Students entering the senior year in the

fall of 1966 will be able to complete all of the secondary requirements during their fifth year. Student teaching and internship on the secondary level will be available during 1967-68. Prospective elementary teachers entering the junior year in the fall of 1966 will be able to satisfy all of their requirements during their fifth year; i.e., 1968-69.

Courses of Study

UNDERGRADUATE COURSES

101 *Secondary School Curriculum and Organization* (1) winter
102 *Methods of Teaching in the Secondary School* (1) spring
170 *History and Philosophy of Education* (1)
171 *Psychological Foundations of Education* (1)
172 *Sociological Foundations of Education* (1)
180 *Special Topics* (1) fall, winter, spring
199 *Individual Study* (1) fall, winter, spring

EDUCATION ABROAD PROGRAM

The Education Abroad Program offers opportunities to undergraduate students of the University of California to study in universities overseas. It is administered for the entire University by the Santa Barbara campus which serves also as a focal point of information on all types of educational exchange experiences. A bulletin entitled *University of California Abroad* is published periodically and is distributed to all of the campuses of the University.

In 1966-67 the University will continue the operation of its study centers in France, Germany, Italy, Japan, Spain, Colombia, Hong Kong, Greece, and the United Kingdom, and will open a Scandinavian center at the University of Lund in Sweden. The centers range in size from ten to one hundred students.

Eligibility requirements are: junior standing in the University, two years of university-level work in the language of the country with a B average (or the 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, Greece, Japan, and the United Kingdom.)

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 Delphi, Greece is for the summer and spring quarters only.)

All will be concurrently enrolled as students at the University of California and in the host university and will receive full academic 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 1967-68 will be accepted on and after October 17, 1966.

Note: Recently a graduate dimension has been added whereby a limited number of graduate students are included in the University's study centers overseas. For further information write to the Education Abroad Program, 2108 South Hall, University of California, Santa Barbara.

THE LIBRARY

JOHN E. SMITH, *University Librarian*

A collection exceeding 110,000 volumes and 2000 current subscriptions to support the instructional and research programs is available in open-stack accessibility.

Reference service, photocopying service, rental typewriters and group study rooms are available in the modern and bright air-conditioned library building.

Daily shuttle service to the research resources on the UCLA campus is offered. Catalogs of the libraries of the Library of Congress, the British Museum, and Bibliotheque Nationale, as well as the Berkeley and UCLA scholarly collections, facilitate the use of research resources beyond those locally available.

The collection is expected to grow to 400,000 volumes by 1971.

THE COMPUTER FACILITY

FRED M. TONGE, *Associate Professor of Administration and Director of Computer Facilities*

The Computer Facility provides computational service 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.

INTRAMURAL SPORTS AND INTERCOLLEGIATE ATHLETICS

The intramural sports program will provide opportunities for all men and women students to participate in a wide variety of individual and team sports. Competition will be organized on the basis of individuals and teams representing various campus student organizations and residence hall units. Awards will be given for outstanding individual and team performance.

In 1966-67 UCI will have representative teams in basketball, golf, tennis, swimming, water polo, crew, sailing, and the possible addition of soccer, Rugby, and gymnastics. The intercollegiate athletics 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 promoted in such sports as golf, tennis, and swimming.

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 or the Chairman of Academic Advising in the Division of Social Sciences.

UNIVERSITY EXTENSION

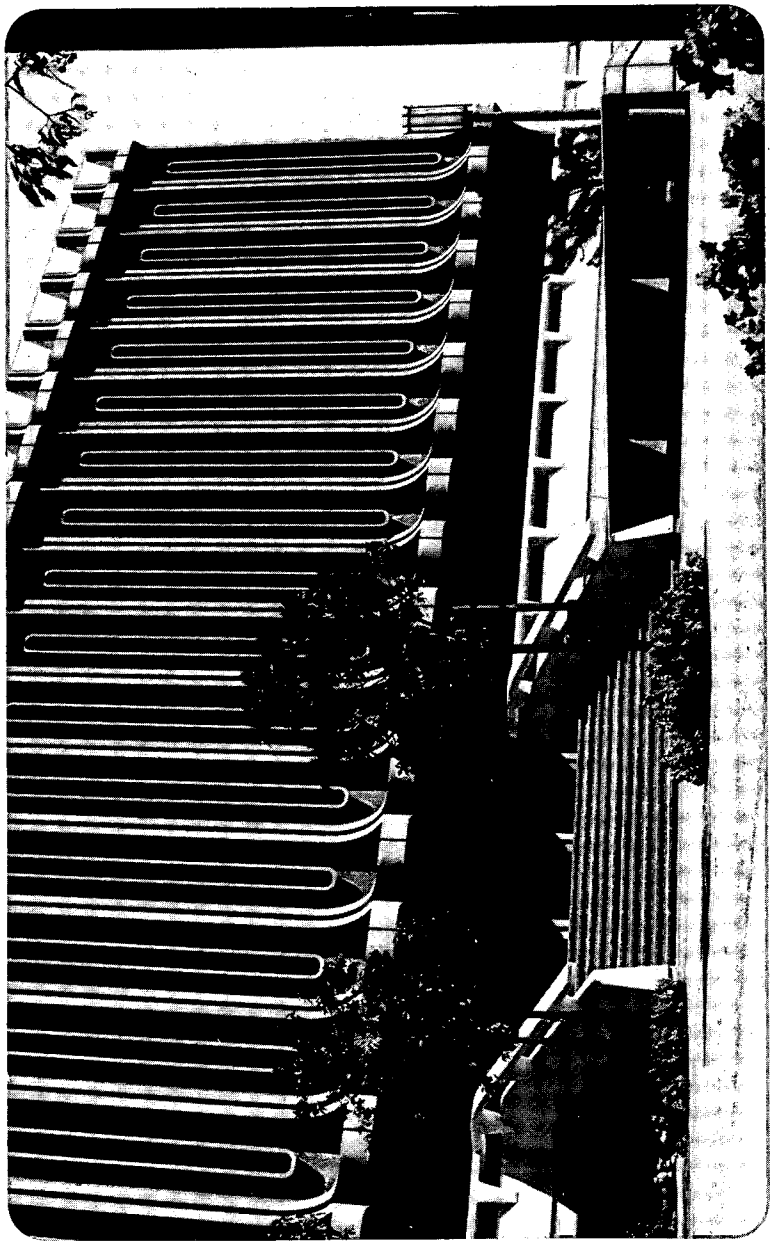
RICHARD N. BAISDEN, *Director*

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 on any campus of the University. The Extension Office at UCI is in Room 1325, Campus Hall; telephone (714) 833-5414.

SUMMER SESSIONS

Summer sessions are held each year on the campuses at Berkeley, Los Angeles, Santa Barbara, Davis and Riverside. Admission to the exercises of the summer sessions is limited to students who are currently in good standing on any campus of the University of California or at another college or university, to applicants under twenty-one years of age who are graduates of high schools or other secondary schools, and to qualified applicants over twenty-one years of age. Courses of instruction leading to baccalaureate and advanced degrees are offered.



4 ADMISSION TO THE UNIVERSITY

■ Application for Admission

Applications for admission as an undergraduate should be filed, together with a nonrefundable fee of $5.00, with the Office of Admissions, 1210 Library Building, University of California, Irvine, California 92664. An application form will be supplied by the Office of Admissions upon request. The application must be filed from October 1 through March 1 for the fall quarter, from May 1 through November 1 for the winter quarter, and from August 1 through February 1 for the spring quarter. Applicants are urged to file early in the application period.

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 the required facilities are available. Since applications will be processed and acted upon in only one Office of Admissions, applications should not be directed to more than one campus.

If after an applicant has filed for admission his plans change and he prefers to register on a different campus, he must write to the Director of Admissions, 570 University Hall, University of California, Berkeley, California 94720, indicating the campus where he now wishes to register and the reason for his change. His records will be transferred to the campus he wishes to attend provided facilities are available there.

■ 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. Transcripts from the last college attended should include a statement of good standing or honorable dismissal. A preliminary transcript should show work in progress.

■ Notification of Admission

So that students may be informed as early as possible about eligibility, they are urged to apply early in the application period and request to have transcripts of record sent to the Office of Admissions.

Students may expect notification about four weeks after final transcripts have been received by the Office of Admissions. Since the receipt of preliminary transcripts may shorten this interval, applicants should arrange for the submission of preliminary transcripts showing work in progress.

Approximate dates of notification:

Fall quarter: April 15
Winter quarter: December 1
Spring quarter: March 1

■ Preparation for University Curricula

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. Lack of a recommended high school course may delay graduation from the University. 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 and which may be obtained from the Office of Admissions or the University Dean of Educational Relations, University Hall, University of California, Berkeley, California 94720.

All students should pursue a full program of academic subjects during their senior year in high school.

Applicants not eligible for admission to the University are usually advised to attend one of the California junior colleges and take courses applicable to the requirements of the college or school in which they wish to enroll.

■ Subject A: English Composition

The University requires every accepted student to pass an examination in English composition (the Subject A examination) or to complete in college an acceptable course of at least 3 units in English composition with a satisfactory grade. Students who enter the University with credentials showing the completion elsewhere of acceptable college-level training in composition or a score of at least 600 in the College Entrance Examination Board Achievement Test in English Composition taken after they have completed the eleventh grade are considered to have met the Subject A requirement. All other students are required to take the examination given by the University, for which there is a fee of

$5.00. Although it is not required for admission, the test must be taken at the opening of the first quarter in attendance, if not taken previously. Students who neither pass the examination nor meet the requirements in one of the above ways will be required to take the noncredit Subject A course in English composition, for which a fee of $45.00 is charged.

■ Admission to Freshman Standing

An applicant for admission to freshman standing must not have been registered in regular session in any college-level institution since graduation from high school.

If, at the time of high school graduation, the applicant does not meet the requirements given below for admission to freshman standing or does not qualify by examination, he must meet the requirements for admission to advanced standing. An exception to this regulation will be made only if the student's deficiency has been the result of his not having studied one or more required high school subjects. Such a student can sometimes remove the deficiency during the summer; he should consult the Office of Admissions in advance.

■ Requirements for Admission to Freshman Standing

An applicant for admission to freshman standing must meet the requirements listed below. Special requirements for nonresident applicants will be found on page 132.

Graduation from High School

An applicant who has been graduated from high school will be admitted to the University upon completion, with the required scholarship average, of the prescribed pattern of courses. The courses offered in satisfaction of admission requirements must be included on a list submitted to the Director of Admissions of the University by the high school principal if the school is located in California. This list must be certified by the principal that the courses specified meet the requirements for admission to the University. If the high school is not located in California, courses will be considered acceptable if the school is accredited.

Subject Requirements (the "a to f pattern")

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 civics or American government.

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 nonacademic 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.

SCHOLARSHIP REQUIREMENTS

At least a B average is required in courses taken after the ninth year used to meet the subject requirements. Grades received in elective courses or in courses taken in the ninth year or earlier are not used in computing this average. Subject requirements are satisfied by courses in which a grade of C or higher has been attained. Grades are considered on a semester basis except from schools that give only year grades. Grades, including those earned in accelerated and advanced courses, are accepted as they appear on the transcript.

In determining the B average, a grade of A in one course will be used to balance a C in another, but an A may not be used to compensate for D, E, or F grades.

Courses taken in the ninth year or earlier in which a grade of D or lower is received may be repeated to establish subject credit.

Courses taken after the ninth year in which a grade of C or lower is received may be repeated to establish subject credit or to improve scholarship. Grades earned in the first repetition may be used to satisfy scholarship. Grades of C or

higher in additional repetitions, or grades earned in a summer session following graduation, will satisfy the subject requirement, but will not be counted higher than a C in scholarship computation.

Courses may be repeated in an amount not to exceed 2 units of the "a to f pattern."

Admission by Examination

An applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination.

The University does not offer entrance examinations but accepts the results of examinations given by the Educational Testing Service for the College Entrance Examination Board.

To qualify by examination, the applicant must present scores in a) the Scholastic Aptitude Test (S.A.T.) and b) three Achievement Tests, which must include:

1. English Composition
2. Social Studies or Foreign Languages
3. Mathematics or Sciences

The tests must not be taken before completion of the first half of the eleventh grade. The first repetition of a test will be accepted, but the verbal and mathematics scores on the Scholastic Aptitude Test must be from the same sitting. The total score on the Scholastic Aptitude Test must be at least 1000; the scores on the three Achievement Tests must total at least 1650, and the score on any one Achievement Test must not be less than 500. For admission of nonresident applicants by examination see page 132.

Arrangements to take the tests should be made with the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton, New Jersey 08540. The fees are to be paid to the Educational Testing Service. Scores will be regarded as official only if they are received by the Office of Admissions directly from the Educational Testing Service.

Applicants should arrange to take the tests as early as possible, so that the scores can be reported in time for consideration for admission.

Admission to Advanced Standing

An applicant who has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduation from high school,

is subject to regulations governing admission to advanced standing. The applicant may not disregard his college record and apply for admission to freshman standing.

REQUIREMENTS FOR ADMISSION TO ADVANCED STANDING

An applicant for advanced standing must meet the requirements listed below.

The requirements for admission to advanced standing vary in accordance with the high school record of the applicant. Each applicant, however, must present from the last accredited college or university attended a statement of good standing and an academic record with a grade point average* of C (2.0) or better. If the record established in any one accredited institution is below a C (2.0) average, an additional unit and scholarship requirement may be imposed on subsequent credit completed to offset the deficit incurred. In addition, the applicant must meet one of the following conditions:

1. An applicant who was eligible for admission to the University in freshman standing (see page 127) may be admitted at any time he has established an overall grade point average of C (2.0) or better.

2. An applicant who was ineligible for admission to the University in freshman standing, but whose only deficiency arose from not having studied one or more of the required high school subjects, may be admitted when the following conditions are met:

a. He has established an overall grade point average of C (2.0) or better.

b. He has satisfied, by appropriate courses, the subject requirements for admission to freshman standing (see page 127.

Exception: Deficiencies in subject requirements will be waived in an amount not exceeding 2 high school units if the applicant has established a minimum of 56 units passed with a grade point average of 2.4 or better. Subject deficiencies in excess of 2 units must be satisfied.

3. An applicant who was ineligible for admission to the Uni-

*The grade point average is determined by dividing the total number of acceptable units attempted into the number of grade points earned on those units. Courses completed with a grade lower than C may be repeated, but the units and grade points count each time the course is taken. Scholarship standard is expressed by a system of grade points and grade point averages in courses acceptable for advanced standing credit in the University of California. Grade points are assigned as follows: for each unit of A, 4 points; B, 3 points; C, 2 points; D, 1 point; P, I, and F, no points.

versity in freshman standing because of low scholarship or a combination of low scholarship and incomplete subject preparation (omission, or by grades of D or lower) may be admitted when the following conditions are met:

a. He has established a minimum of 84 acceptable quarter or 56 acceptable semester units passed with a grade point average of 2.4 or better.
b. He has satisfied, by appropriate courses, subject requirements for admission to freshman standing (see page 127) except that subject deficiencies will be waived in an amount not exceeding 2 high school units.

Intercampus Transfer

An undergraduate student who is registered on any campus of the University, or who was previously registered in a 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 proper forms on the campus where he was last registered in regular session. The intercampus transfer application form and application for transcript of record form may be obtained from the Office of the Registrar and must be filed with that office within the filing periods listed on page 125 under "Application for Admission."

UCI Transcripts

Upon application, the Registrar will provide official transcripts of work undertaken at Irvine. The charge for each transcript of every undergraduate record and/or graduate record is $1.00 and the total amount due must accompany the application.

Credit for Work Taken in Other Colleges

The University grants unit credit for courses consistent with its curriculum that have been completed in colleges and universities accredited by appropriate accrediting agencies.

As an integral part of the system of public education of California, the University accepts, at full unit value, approved transfer courses completed with satisfactory grades in the public junior colleges of the state. 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. After a student has earned 70 semester units or 105 quarter units acceptable toward a degree, no

further credit will be granted for courses completed at a junior college.

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 or college in which the student plans to enroll.

■ Nonresident Admission

Graduation from High School

The acceptability of records from high schools outside California will be determined by the Office of Admissions.

Subject Requirements

The same subject pattern as for a California resident is required (see page 127).

Scholarship Requirements

The scholarship requirements for a resident applicant apply to a nonresident applicant except that the scholarship average must be 3.4 or higher on the required high school subjects.

Admission by Examination

A nonresident applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination. The requirements for a resident applicant apply to a nonresident applicant except that the total score on the Scholastic Aptitude Test must be at least 1100 and the scores on the three Achievement Tests must total at least 1725.

Requirements for Admission of Nonresidents to Advanced Standing

In addition to the regular admission requirements (see page 129), a nonresident applicant for admission to advanced standing must have maintained a grade point average of 2.8 or higher in college subjects attempted and acceptable for transfer credit. If the applicant did not have at the time of high school graduation an average of 3.4 or higher in courses satisfying the required subject matter, he must present a minimum of 56 units passed with a grade point average of 2.8 or higher.

Admission of Applicants with Bachelors' Degrees

Ordinarily, an applicant with a Bachelor's degree substantially equivalent to the Bachelor's degree granted by the University of California should apply for admission to graduate status. An applicant with a superior record may occasionally qualify as a student in limited status, or, after a complete change of objective, as an undergraduate seeking a second baccalaureate. In either case, the previous scholarship record must be such as to indicate very strong probability of academic success. Admission is subject to the approval of the Admissions Officer and of the Dean of the division or school in which the applicant plans to enroll.

Admission of Applicants from Other Countries

The credentials of an applicant for admission from another country in either undergraduate or graduate standing are evaluated in accordance with the general regulations governing admission. An 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. Doing so will allow time for exchange of necessary correspondence, and, if the applicant is admitted, will help him in obtaining the necessary passport visa.

An applicant from another country whose native language is not English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in the University. An applicant's knowledge of English is tested by an examination given by the University. Admission of an applicant who fails to pass this examination will be deferred until he has acquired the necessary proficiency in the use of English.

Foreign students whose schooling has not been in English are urged to 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 08540, U.S.A. Results of the test should be forwarded to the Office of Admissions on the campus where the student plans to enroll.

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.

All features of the Student Health Service are available to foreign students upon payment of the incidental fee of $219.00 per academic year.

■ ADMISSION TO SPECIAL STATUS

Students over age 21 who have not had the opportunity to complete a high school program or who have not completed a substantial amount of college work and who by reason of special attainments may be prepared to undertake certain courses in the University toward a definite and limited objective, may be admitted for a specified time. A personal interview is usually required and the applicant must submit transcripts of record from all schools attended beyond the eighth grade. A special student will seldom be able to undertake the work of the engineering and professional colleges or schools. He will not be admitted to special status for the purpose of making up requirements for admission to the University as a regular student.

■ ADMISSION TO LIMITED STATUS

Students in limited status are those with a Bachelor's degree who are not candidates for an advanced degree or those without a Bachelor's degree who have completed a substantial amount of college work and who by reason of special attainments may be prepared to undertake certain courses in the University toward a definite and limited objective. Transcripts of record from all schools attended beyond the eighth grade must ordinarily be submitted. Admission is for a definite period, and a prescribed scholarship average must be maintained. An applicant will not be admitted to limited status for the purpose of raising a low scholarship average.

■ 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. Students who do not desire to become candidates for higher degrees must meet the same admission requirements as those who are prospective candidates for degrees.

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 August 15 for the fall quarter, 1966, December 1 for winter quarter, 1967, and February 15 for spring quarter, 1967. The Graduate Division requires *two* complete sets of official records covering all work attempted, together with official evidence of degrees conferred, from all institutions of college level attended, including any campus of the University of California, regardless of length of attendance. To be official, records must bear the Registrar's signature and the seal of the issuing institution, and should be sent directly from the issuing institution. A summary of credit transferred and recorded on the transcript record issued by the institution granting the degree will not suffice, *except* in the case of graduates of the University of California. *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.

■ FAILURE TO REGISTER

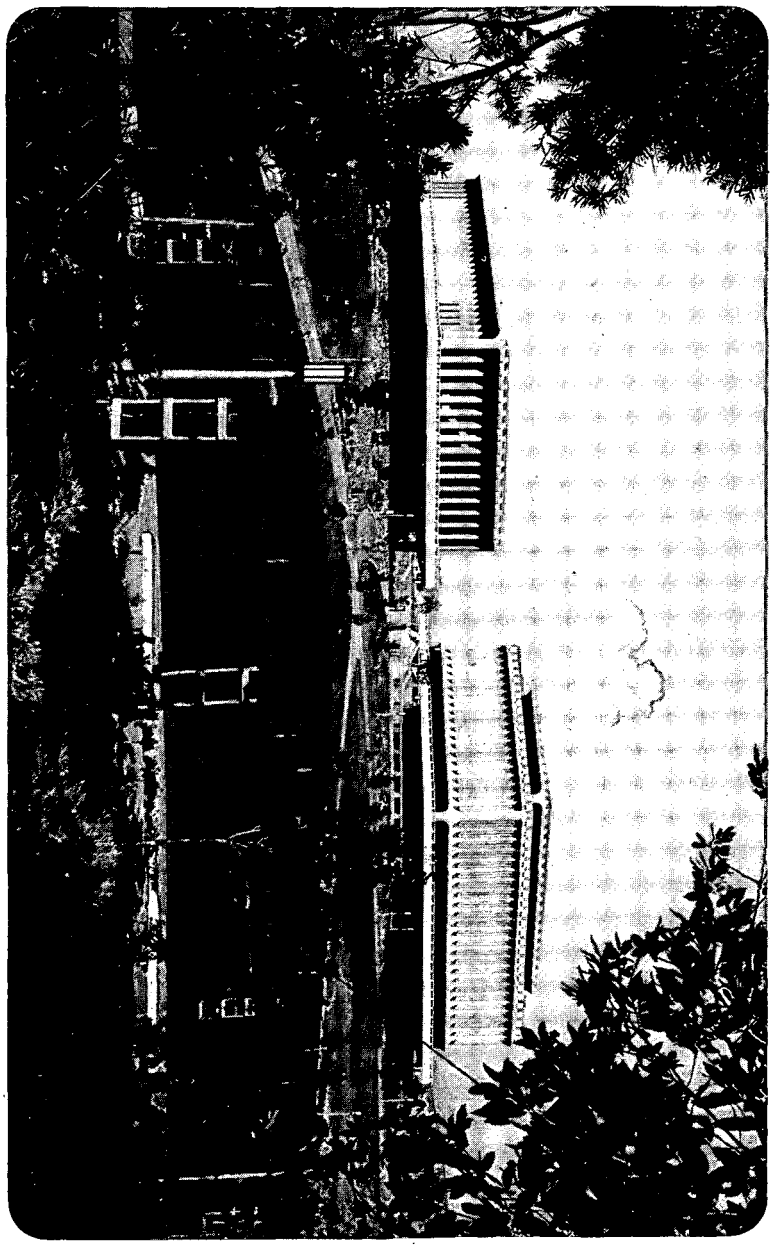
An applicant who is not eligible for admission or one who has been admitted but does not register in the quarter for which he applied, and who thereafter desires to attend the University, must submit a new application for admission.

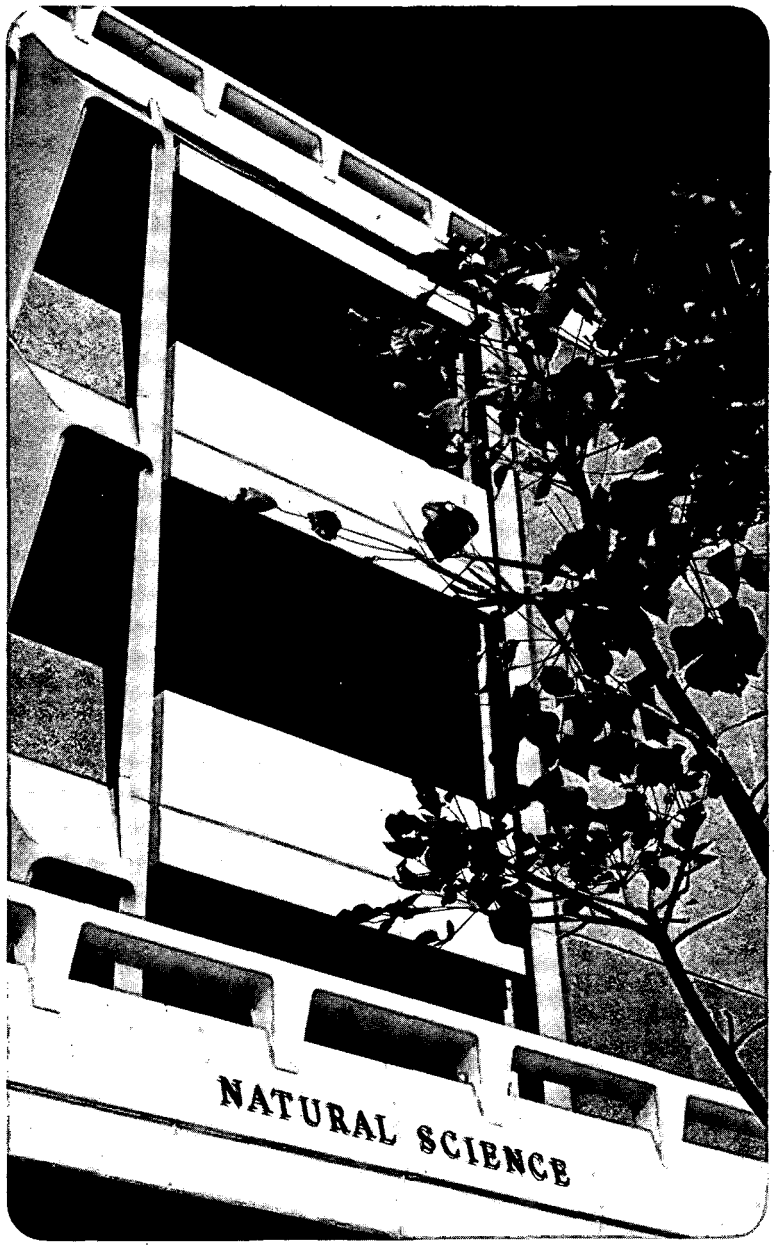
■ MEDICAL EXAMINATION AND VACCINATION CERTIFICATE

To safeguard the health of the student and of the University community, every new student (including transfers) must submit to the Student Health Service a physical examination questionnaire completed and signed by his personal physician. Every new student and every student returning to the University after an absence of one or more quarters must present with the medical examination form a certificate of successful vaccination against smallpox within the last three years. The forms for these reports are routinely sent to all new students.

■ RULES GOVERNING RESIDENCE

Each student is responsible for making sure he is at all times properly classified as resident or nonresident of California. If he is in doubt about his resident status, he should consult the student handbook or communicate with the Attorney in Residence Matters, 590 University Hall, University of California, Berkeley, California 94720.




NATURAL SCIENCE

■ Student Expenses and Fees

It is not possible to give exact figures for student expenses on the Irvine campus of the University of California; costs will vary according to personal tastes and the financial resources of the individual. Certain expenses are common to all students; other expenditures are optional and may vary considerably.

Although each student must determine his own budget in keeping with his needs and resources, the University can provide the following as a guide in computing average annual expenses (three quarters of attendance):

Incidental fee	$ 219
Associated Students fee per year (to be determined at a later date), estimated	21
Room and board (20 meals per week) in University residence halls	1006*
Books and supplies per year may average	150
Personal expenses, including laundry, clothing, recreation, transportation and miscellaneous	454
Average annual total	$1850

Students classified as nonresidents of the State pay an additional $800 a year as tuition. Board and room costs for students making alternative housing arrangements will, of course, vary.

4 GENERAL INFORMATION

■ Incidental Fee

The incidental fee is $73 each quarter for both graduate and undergraduate students. This fee, which must be paid at 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.

■ Associated Students Fee

This fee will be determined by the members of the Associated Students early in the fall 1966 quarter and after approval by The Regents of the University it will be assessed and collected for that quarter. Thereafter, it will be assessed at the beginning of each quarter. The fee will probably amount to about $7.00 per quarter.

*Allowance is provided for a residence hall fee assessment and one meal on Sunday.

■ PARKING FEE

A fee of $18 per year has been levied for parking of cars on campus.

■ TUITION

Tuition is free to every student who has been a legal resident of the state for a period of one year immediately preceding the opening day of the quarter during which he wishes to enroll. Every student who has not been a legal resident of the state for said period is classified as nonresident and is subject to payment of a nonresident tuition fee of $267 per quarter, payable at registration.

■ MISCELLANEOUS FEES AND REFUNDS

A schedule of miscellaneous fees and other information on this subject, *Student Fees and Deposits,* may be obtained from the Cashier, University of California, Irvine. All fees are subject to revision by The Regents of the University of California.

■ UNDERGRADUATE SCHOLARSHIPS

A limited number of scholarships are available for both entering and continuing students on the Irvine campus from funds donated by individuals, organizations, and by The Regents of the University.

Awards will be 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, 1423 Library Building, University of California, Irvine, California 92664. Applications must be filed during the period December 1 to February 15. These dates pertain to the year prior to the academic year for which the awards are to be made.

■ REGENTS' SCHOLARSHIPS

A 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 of the University of California, 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 administrative regulations of The Board of Regents. Loans from these funds are generally of a short-term nature and ordinarily do not bear interest.

In addition, long-term students 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.

Further information concerning loan funds may be obtained from the Office of Financial Aids.

■ STUDENT EMPLOYMENT

Work opportunities will be available for students who wish to supplement their existing financial resources. Assistance will be offered to students who are interested in part-time employment. Students who demonstrate need for financial assistance upon submission of the Parents' Confidential Statement may qualify for a part-time job under the College Work-Study Program. This program is supported by a special grant from the Federal Government for the purpose of establishing part-time jobs for students who must work in order to continue their education.

■ LIVING ACCOMMODATIONS

The University maintains on-campus residences for 500 undergraduate single students. Each residence houses fifty students and a resident assistant, and provides an excellent opportunity for small-group living, self-government, and leadership experience. Each residence is divided into suites of four double rooms, living room, and bath; students eat in the campus Commons. Rooms are furnished except for bedspreads, blankets, and study lamps. The residences close during the Christmas and spring recesses, but special arrangements may be made for housing during these periods.

The University is building a hundred one- and two-bedroom apartments on campus. These apartments will be furnished and will be rented to married graduate and undergraduate students. During 1966-67, however, some of these apartments will be used

as residence halls for single undergraduates who will live in them and eat in the Commons.

Off-campus room and apartment listings are available to students who desire to call in person at the Housing Office. Since the 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 residences and apartments must have a signed housing contract and deposit on file with the Housing Office.

■ Student Health Service

Among the services available to all regularly enrolled students on the UCI campus is a Health Service under the direction of a physician.

A dispensary staffed by a registered nurse and by local physicians will provide out-patient type care including treatment, diagnosis, and immunization. Clinical laboratory procedures are also available at the dispensary, and at the local hospital whose services and facilities are convenient to the UCI community. Appointments with medical specialists may be arranged as required. The University arranges hospitalization for students who become ill and require observation and isolation. Doctors are on call at all times for emergency care.

Additional health protection is provided students in an insurance program covering hospitalization and surgery in illness and accidents. Coverage under the program extends to all times and all places while the students is enrolled at UCI.

All students who pay the incidental fee will receive the above benefits.

As part of the regular admission procedure a health statement is required of all new students. Prior to registration a form is furnished each student for use by his private physician in recording the results of the examination. During registration the student must bring to the office of the Student Health Service the physical examination form properly completed and signed, together with a certificate of smallpox vaccination dated within the past three years, and a report of a tuberculosis skin test. Students with contagious disease or physical or mental impairment which would prevent them from completing their studies will be excluded.

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

■ Student Services and Student Government

Donald E. Walker/*Vice-Chancellor for Student Affairs*
Robert S. Lawrence/*Dean of Students*
Spencer C. Olin, Jr./*Coordinator of Academic Advising*
Lyle C. Gainsley/*Registrar and Admissions Officer*
Gerald B. Sinykin, M.D./*Director of Student Health Services*
Mrs. Bette Abs/*Scholarships and Student Financial Aids*
Miss Janice Jenkins/*Foreign Student Advisor*
Mrs. Ellene J. Sumner/*Director of Housing and Food Services*
Miss Coralie Turbitt/*Director of Student Activities*

The office of Vice-Chancellor for Student Affairs at Irvine has been established for the purpose of coordinating all student services provided by the University. These include the functions of registration and admissions, housing and food services, financial aids, activities, student health, and academic counseling.

It is assumed that students admitted to the Irvine campus are here to acquire an education, much of which will grow out of their personal contact with professors. It is a function of the office of the Vice-Chancellor for Student Affairs to facilitate, wherever possible, this professor-student relationship, and to permit the student to pursue productively the academic and extracurricular experiences associated with University life.

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 the opportunity of establishing organizations, traditions, and a responsible student government. The entire staff looks forward to working with faculty and students in promoting the creative uses of whatever time each student may spend in the community of scholars which is the University of California, Irvine.

■ Student Life

Students on the new Irvine campus have many opportunities to shape the character of campus life. In 1966-67 the student government and the honor code will begin their first full year of operation. Extracurricular activities will provide for a broad range of interests. Various organizations devoted to politics, spirit, and service have already been established. (There are no fraternities or sororities at present at Irvine.) The several religious organizations are coordinated by the University Interfaith Foundation under the direction of Dr. Cecil Hoffman. A variety of cultural and social events takes place during each quarter.

Information about student government, organizations, and activities is available in the Student Activities Office, Room 1014, Commons.

■ BUSINESS AND FINANCE

L. E. COX/*Vice-Chancellor, Business and Finance*
JAMES G. WILSON/*Business Manager*
ROBERT G. DAVIS/*Accounting Officer*
EARL F. GRAHAM/*Construction Manager*
ROBERT W. HEAVEY/*Chief of Police*
RALPH O. LAUE/*Personnel Director*
EARL B. LUDWICK/*Purchasing Agent*
C. O. REINHARDT/*Physical Plant Manager*
COULSON TOUGH/*Campus Architect*

The Office of the Vice-Chancellor, Business and Finance, is responsible for planning, developing and maintaining policies and procedures for the business and financial controls for the campus.

This office formulates long-range plans to meet administrative organization requirements of the campus, establishes procedures for safeguarding University assets and funds, and insures that authorized budget procedures are followed in all departments. Plans are developed here for maintaining the Physical Plant and insuring that security measures are provided. The administration of all matters related to planning, programming and construction of facilities are the responsibility of the Business and Finance Office.

Functions involved to assist in administering this varied program include accounting, budgeting, architecture, engineering, construction, security, purchasing, personnel administration, communications and related activities.

The Office of the Vice-Chancellor, Business and Finance, provides a substantial portion of the administrative support for the campus with a viewpoint of developing business and finance programs compatible with the campus objectives of instruction, research and public service.

■ PUBLIC AFFAIRS OFFICE

H. BRADFORD ATWOOD/*Assistant to the Chancellor and Public Affairs Officer*

The Public Affairs Office on the Irvine campus has three general and several special areas of responsibility. Its general functions are those of public information, publications and community relations. As Assistant to the Chancellor, the Public Affairs Officer has supervision of these functions as well as special responsibility for gifts and endowments, university relations, alumni relations, public ceremonies, the University Centennial Celebration, 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, and the UCI Public Relations Advisory Council.

■ OFFICE OF THE CHANCELLOR

MRS. ELOISE KLOKE, *Assistant to the Chancellor*

The Office of the Chancellor has an open door policy for students, who are welcome to visit the office and consult with the staff.

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 beginnings 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 mantains 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 Sta-

tion, 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.

The student enrollment of some 80,000 is expected to increase to 100,000 by 1970. 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.

A Chronology

1869 /*The University* admitted its first students at the College of California site in Oakland while buildings were being erected on the permanent campus at Berkeley. Instruction began on the Berkeley campus in September, 1873.

1873 /*The San Francisco Medical Center* began as the Medical Department of the University when the Toland Medical College was transferred to The Regents. The California College of Pharmacy was also acquired in 1873. The College of Dentistry was added in 1881, followed by the School of Nursing in 1917.

1906 /*The Davis campus* was established as the University Farm. Davis was organized as a branch of the College of Agriculture in 1922. The School of Veterinary Medicine opened in 1948 and the College of Letters and Science in 1951. Davis became a general campus of the University in 1959.

1907 /*The Riverside campus* was founded as the Citrus Experiment Station. The College of Letters and Science was added in 1954, and Riverside was designated as a general campus in 1959. The College of Agriculture was established in 1961.

1912/*The San Diego campus* began as the Scripps Institution for Biological Research at La Jolla. In 1925 the name was changed to the Scripps Institution of Oceanography. The School of Science and Engineering was established in 1959; San Diego was authorized as a general campus in 1958 and opened to undergraduates in 1964.

1919/*The Los Angeles campus,* originally the Los Angeles State Normal School, became part of the University as the Southern Branch. It was designated the University of California at Los Angeles in 1927. The School of Medicine (forerunner of the UCLA Medical Center) was authorized in 1946.

1944/*The Santa Barbara campus,* formerly Santa Barbara State College, became a part of the University as Santa Barbara College. It was authorized as a general campus in 1958.

1961/*The Santa Cruz and Irvine campus sites* were acquired, having been authorized by action of The Regents in 1957. Both campuses were opened to students in 1965.

Administrative Officers — UCI

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Daniel G. Aldrich, Jr.

VICE-CHANCELLOR, ACADEMIC AFFAIRS
Jack W. Peltason

VICE-CHANCELLOR, STUDENT AFFAIRS
Donald E. Walker

VICE-CHANCELLOR, BUSINESS AND FINANCE
L. E. Cox

ASSISTANT TO THE CHANCELLOR AND PUBLIC AFFAIRS OFFICER
H. Bradford Atwood

ASSISTANT TO THE CHANCELLOR
Mrs. Eloise Kloke

REGISTRAR AND ADMISSIONS OFFICER
Lyle C. Gainsley

DEAN OF STUDENTS
Robert S. Lawrence

UNIVERSITY LIBRARIAN
John E. Smith

CAMPUS BUSINESS MANAGER
James E. Wilson

ACCOUNTING OFFICER
Robert G. Davis

HOUSING AND FOOD ADMINISTRATOR
Mrs. Ellene J. Sumner

DIRECTOR, STUDENT HEALTH SERVICE
Gerald B. Sinykin, M. D.

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Clark Kerr

PRESIDENT OF THE UNIVERSITY, EMERITUS
Robert Gordon Sproul

VICE-PRESIDENT OF THE UNIVERSITY
Harry R. Wellman

VICE-PRESIDENT OF THE UNIVERSITY, EMERITUS, AND
DEAN OF THE COLLEGE OF AGRICULTURE, EMERITUS
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VICE-PRESIDENT/ACADEMIC AFFAIRS
Angus Taylor

VICE-PRESIDENT/ADMINISTRATION
Earl C. Bolton

VICE-PRESIDENT/BUSINESS AND FINANCE
Charles J. Hitch

VICE-PRESIDENT/EXECUTIVE ASSISTANT
Eugene C. Lee

VICE-PRESIDENT/PHYSICAL PLANNING AND CONSTRUCTION
Elmo R. Morgan

VICE-PRESIDENT/UNIVERSITY RELATIONS
Thomas C. Sorensen

VICE-PRESIDENT/GOVERNMENTAL RELATIONS AND PROJECTS, EMERITUS
James H. Corley

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Thomas J. Cunningham

SECRETARY OF THE REGENTS
Miss Marjorie J. Woolman

TREASURER OF THE REGENTS
Owsley B. Hammond

UNIVERSITY DEAN OF ACADEMIC PERSONNEL
Sidney S. Hoos

UNIVERSITY DEAN OF AGRICULTURE
Maurice L. Peterson

UNIVERSITY DEAN OF EDUCATIONAL RELATIONS
Frank L. Kidner

DEAN OF UNIVERSITY EXTENSION
Paul H. Sheats

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CHANCELLOR AT DAVIS
Emil M. Mrak

CHANCELLOR AT IRVINE
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CHANCELLOR AT LOS ANGELES
Franklin D. Murphy

CHANCELLOR AT RIVERSIDE
Ivan H. Hinderaker

CHANCELLOR AT SAN DIEGO
John S. Galbraith

CHANCELLOR AT SAN FRANCISCO
John B. deC. M. Saunders

CHANCELLOR AT SANTA BARBARA
Vernon I. Cheadle

CHANCELLOR AT SANTA CRUZ
Dean E. McHenry

PROVOST, CALIFORNIA COLLEGE OF MEDICINE
W. Ballentine Henley

The Regents of the University of California

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Governor of California and President of The Regents

EDWARD W. CARTER
Chairman of the Regents

CLARK KERR*
President of the University

EDWIN W. PAULEY

CORNELIUS J. HAGGERTY

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MISS MARJORIE J. WOOLMAN
Secretary of The Regents

ROBERT M. UNDERHILL
Treasurer of The Regents, Emeritus

OWSLEY B. HAMMOND
Treasurer of The Regents

**Ex Officio*

The photographs in the book have been chosen to provide a record of the feeling around the campus site during the first academic year. The photographs were taken by Stu Shaffer.

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