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*Telephone: Area Code 415 642-6000  Cable Address: UNIVCAL*

UNIVERSITY OF CALIFORNIA • BERKELEY VOLUME 67 NUMBER 8 MAY 31, 1973

A series of administrative publications of the University of California, Berkeley 94720. Second-class postage paid at Berkeley, California. Published eighteen times a year—one issue in June and September; two issues in April; three issues in March, May, and July; five issues in August.

Announcements herein are subject to revision. Changes in the list of Officers of Administration and Instruction may be made subsequent to the date of publication.
Admission to Undergraduate Status:
Application packets are available two weeks prior to the date shown for the beginning of the application filing period. California high school and community college students may obtain packets from their counselors; others, in person at or by writing any University of California Admissions Office. Written requests may be made as early as six weeks in advance of the filing date in order to meet the release date for application packets. All campuses observe these dates for the beginning of application filing. All applications filed during the first month of the filing period are accepted for consideration. After the first month the deadline will vary. Each college and school has enrollment quotas that limit the number of new freshmen and advanced standing students that may be admitted. Once quotas have been filled, additional applications cannot be accepted. At the request of the applicant, the application may be redirected to another University campus where enrollments are still open.

Admission and Readmission to Graduate Status:
Final date for filing credentials and applications with the Dean of the Graduate Division for admission or readmission to graduate standing.

Readmission to Undergraduate Status:
Final date for filing applications with the Registrar for readmission to undergraduate status.

Registration of students, graduate and undergraduate, in departments at Berkeley.§

School of Law, registration of students.

School of Law, term begins.

Academic and Administrative Holiday.

School of Law, instruction begins.

School of Law, study-list filing.

Examination in English for foreign students.

School of Law, final date to register.

* Importance of Early Application. In order to give time for necessary correspondence and for due notice to applicants who may be required to take examinations for admission, credentials should be forwarded to the Admissions Office at the earliest possible date.

† Registration forms may be obtained beginning May 14 by students registered in the spring quarter who continue in the same status in the fall quarter. Students registered in the spring term in the School of Law who continue in the same status in the fall term may pick up registration forms beginning on May 10.

‡ Dates to be determined.

§ Except School of Law.
Quarter begins.§

Subject A Requirement

Late Registration begins. Fee $25.

Preenrollment and assignment to sections.

School of Law, final date for students to file petitions to add or drop courses. Fee thereafter, $3. At the discretion of the Dean, grade F may be assigned in discontinued courses.

Final date for filing with the committees in charge the final form of dissertations for all doctoral degrees to be conferred in 1973-74.

Instruction begins.§

Final date for filing applications for financial aid and undergraduate scholarships for 1974-75 or any quarter thereof.

Study-list filing. See Instructions to Students received at time of registration for details. Fee for late filing, $10.§

Final date to register.§

Final date for filing applications in candidacy for all master's degrees to be conferred in 1973-74; Office of the Dean of the Graduate Division, 1 California Hall. All signatures required upon these applications must be obtained in advance.

Last date for filing without fee announcements of candidacy for any bachelor's degree or the doctor of optometry degree to be conferred 1973-74. Fee thereafter, $3.

Final date for filing announcements.

Final date for filing applications in candidacy for all doctoral degrees to be conferred in 1973-74: Office of the Dean of the Graduate Division, 1 California Hall. All signatures required upon these applications must be obtained in advance.

With the exception of undergraduate students enrolled in the College of Letters and Science, final date to file petitions to add or drop courses. Fee thereafter for all students, $3. At the discretion of the Dean, grade F may be assigned in discontinued courses. Also, except for undergraduate students in the College of Letters and Science, final date to make changes in option of enrolling in courses on passed/not passed basis or letter-graded basis.

Undergraduates:

Graduates:§

Final date for undergraduate students in the College of Letters and Science to file petitions to add or drop courses and to make changes in the passed or not passed option.

§ Except School of Law.
Final date for filing with committees in charge the final form of theses for master's degrees to be conferred in 1973–74.

Final date for filing dissertations with the Dean of the Graduate Division for all doctoral degrees to be conferred in 1973–74.

**Academic and Administrative Holiday**

Instruction ends.‡

Final examinations in departments at Berkeley.‡

Final date for filing applications for fellowships and graduate scholarships for 1974–75.

Final date for filing theses with the Dean of the Graduate Division for all master's degrees to be conferred in 1973–74.

Quarter ends.‡

School of Law, instruction ends.

**Academic and Administrative Holiday**

School of Law, final examinations.

School of Law, term ends.

‡ Except School of Law.
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Introduction

History of the University of California

The promise of a University of California is contained in the State's constitution, drafted in Monterey in the gold rush year of 1849. California was admitted to the Union the following year, although 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 that institution was incorporated as the College of California, and plans were made to purchase a new site north of Oakland. The community developing around this new site was given the name of Berkeley in 1866.

In 1853 Congress had 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 Henry H. Haight signed the act that created the University of California.

The University, heir to the lands, buildings, library—and even alumni—of the old College of California, now came into being. The move to the new "College Site" in Berkeley came in 1873, when North Hall and South Hall (the latter still in service) were completed. These two Victorian-style buildings stood out prominently on an area that was barren except for a few farmhouses and barns. Students came to class from Oakland by horsecar, traveling up what is now Telegraph Avenue. Some traveled from San Francisco across the bay by ferry, then up to the campus by horsecar—about a two-hour trek. As enrollment increased at Berkeley, more buildings were added—first a mining and engineering building, a library, and a gymnasium; then mechanics, philosophy, agriculture, botany, and chemistry buildings—all before the turn of the century.

As the Berkeley campus grew, other campuses were added throughout California: San Francisco in 1873; Davis (initially the University Farm) in 1905; Riverside (initially the Citrus Experiment Station) in 1907; San Diego (initially the Scripps Institution of Oceanography at La Jolla) in 1912; Los Angeles (UCLA, initially the Los Angeles State Normal School) in 1919; Santa Barbara (initially Santa Barbara State College) in 1944; and Santa Cruz and Irvine in 1961. The nine-campus University of California is now one of the largest in the world. Each of its campuses has a separate administration, organization, and style of academic life.

The University also maintains research stations, field stations, Extension
centers, and other facilities of research and instruction in more than 80 locations throughout California. With such extensive resources, the University enjoys a foremost position among state universities, offering advancement of knowledge in virtually every field of human endeavor in modern life, and continuing to serve as an indispensable force in the growth and development of our society.

**Students** The inaugural enrollment of fewer than 200 students at the University of California has now grown to over 106,000 of the brightest young people of the college generation. Nearly 85% are residents of California, with the remainder from other states and from 100 foreign countries. Nearly one third are studying at the graduate level.

Admission to the University is limited to graduates of California high schools in the top 12½% of their classes; to graduates of out-of-state high schools in the top 6½% of their classes; to students transferring from other colleges and universities whose academic records meet University requirements; and to graduate students with distinguished records. Admission requirements are uniform for the nine general campuses, and students may transfer from one to another.

These students come to the University with a tremendous range and variety of educational goals. They seek bachelor’s, master’s, and doctor’s degrees in more than 100 fields of study, spanning the physical and biological sciences, social sciences, humanities, and arts. Many seek intensive professional education in such fields as architecture, engineering, law, medicine, public health, and social welfare, to name a few. In all cases, the University seeks to provide them the broadest and most complete education consistent with the demands of their prospective careers.

**Faculty and Instruction** The faculty of the University of California is noted for its unusually high number of Nobel laureates, National Academy of Science members, and holders of other notable awards for distinguished academic achievement. The men and women who teach courses at the University of California are exceptionally able scholars in their fields. They add to their knowledge of their subject by continuing research. They bring to the classroom the excitement of discovery, whether the class is a seminar of nine students or a lecture hall of several hundred. The faculty places a strong emphasis on the relationship between teacher and student. While seeking to meet the growing demand which our society places upon the University for advanced research and other academic services, the faculty holds firmly to its traditional role as educators of the young. Classes are as small as possible—about 70% of instruction is carried on in groups of 25 or less—and students are encouraged to confer privately with instructors.

The quality of the University’s programs was reaffirmed by the American Council of Education in its evaluation of graduate schools in the United States in a report released in January, 1971. The ACE ranked Berkeley as the top graduate school in the country. Twenty-six of the thirty-five graduate departments were ranked as the first, second, or third best in the nation. Eight departments were top-ranked.

This **General Catalogue**, together with those of the other campuses of the University, embodies about 10,000 courses, covering the spectrum of man’s
knowledge. Students are given a considerable degree of freedom in choosing their courses, although their colleges and departments, or schools, provide a broad framework of minimum general requirements and major requirements. The student plans his program with the aid of an adviser and normally chooses a field of concentration by his junior year.

Research The distinction of the University's faculty has already been noted. The University is also known for the quality and scope of its research facilities. Each campus maintains research units, including laboratories, museums, centers, and institutes—covering most of the broad fields of study. There are also research stations, field stations, and other facilities of research in more than 80 locations throughout California. Continuing research is financed by University funds, private endowments, and grants from the federal and State governments. These funds provide research fellowships and assistantships for faculty and outstanding graduate students.

The libraries of the University are a valuable resource to research and instruction. The major collections are at the Los Angeles campus, with more than 2,500,000 volumes, and at the Berkeley campus, with more than 4,000,000. The other campuses also maintain extensive library collections. Altogether, the University libraries cover virtually every research need. To minimize duplication, each campus has developed a specialized concentration of volumes. Interlibrary loans are arranged with ease.

Administration 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 public 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 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 of certificates and degrees. It authorizes and supervises all courses in the schools and colleges.
University Extension  University Extension makes available a broad range of programs based on the following educational aims: (1) the intellectual and cultural development of adults; (2) the dissemination of new knowledge resulting from teaching and research activities within the University; (3) the continuing education of scientific, technical, and professional personnel; (4) the development of special educational programs for public and private organizations and agencies; and (5) public affairs education through programs designed to aid adults in meeting their responsibilities as citizens.

The Berkeley Campus

The Berkeley campus is surrounded by the business and residential districts of Berkeley (population, 121,000), at the foot of the wooded Berkeley hills. Despite its growth, the campus retains much natural beauty, with wooded glens, spacious plazas, and picturesque Strawberry Creek running westward through the length of the campus. The Berkeley Hills afford a panoramic view of the San Francisco Bay Area, a nine-county region widely acclaimed for its cultural activities.

One is impressed by the vitality of the campus. Political tables and noontime speeches that make news are, of course, part of the story. A host of other features—public lectures and concerts; campus-sponsored forums and seminars; clubs and workshops; dramatic presentations; international folk-dance festivals; art, photographic, design, architectural, anthropological, and archaeological exhibits and displays; recitals; lectures and more than twenty bookstores within one square mile—all of these make Berkeley what it is. In this environment, scholars of all ages gather to share ideas, information, and experience in a mood of exchange, toleration, and creativity.

Enrollment at Berkeley has reached its limit of 27,500, including 18,000 undergraduates. About 3,200 students live in University residence halls, and the remainder in privately owned or cooperative housing, or fraternities and sororities. There are more than eighty academic departments, and most offer instruction at both the undergraduate and graduate levels.

Many changes are taking place on the Berkeley campus: classic buildings share ground with modern steel and glass designs; the Venetian-style Campanile at the center of the campus, long a landmark of the West, now looks down upon a new landmark, the modern Student Center complex at the south entrance of the campus; the undergraduate lecture-hall session, long a part of the student’s curriculum, now shares time with the seminar, preceptorial, and tutorial. Oldest of the nine campuses, the Berkeley campus is adapting to new needs and new trends, in an effort to make the experience of higher education one of the most exciting, meaningful, and thorough of human experiences.
Admission and registration carry the greatest number of problems for students. This chapter is a summary of admission and registration procedures for the University. Further information may be found in the UNDERGRADUATE ADMISSIONS CIRCULAR, the CIRCULAR FOR NEW UNDERGRADUATES, and the REGISTRATION CIRCULAR.

Admission

You may obtain application packets containing all necessary forms and instructions from California high school and community college counselors or from the Office of Admissions, 127 Sproul Hall, University of California, Berkeley, California 94720. This office accepts completed applications on or after the opening dates for filing: Winter Quarter 1974—July 1, 1973; Spring Quarter 1974—October 1, 1973; Fall Quarter 1974—November 1, 1973.

You must include with your completed application forms a fee of $20 (not refundable).

If you have not registered in regular session in any college-level institution since graduation from high school, you will be applying for admission as a freshman student. You must meet these requirements for admission as a freshman:

(a) History 1 year. This must consist of one year of United States history or one-half year of United States history and one-half year of civics or American government.

(b) English 3 years. These must consist of three years of English composition, literature, and oral expression.

(c) Mathematics 2 years. These must consist of two years of subjects such as elementary algebra, intermediate and advanced 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 year. This must consist of a year course in one laboratory science, taken in the tenth, eleventh, or twelfth grade.

(e) Foreign Language 2 years. This must be in one language. Any foreign language with a written literature is acceptable.

(f) Advanced Courses 1 (or 2) years. This must be chosen from the following: Mathematics, a total of one year of second-year algebra, solid geometry, trigonometry, or other certified advanced courses. Foreign language, either one additional year in the same foreign language offered under e or two years of another foreign language. Science, a year course in any laboratory science completed subsequent to the laboratory science used for d above.

If you are a graduate of a California high school, these courses must appear on a list that your high school principal has certified meet the course descriptions above and that he has placed on file with the Director of Admissions. Additional elective units are also required to complete the minimum of 15 standard entrance units.
You must have at least a B (3.0) average in those courses taken after the ninth year which are used to meet the subject requirements. Subject requirements are satisfied only by courses in which a grade of C (2.0) or higher has been assigned.

If you are applying as a freshman or if you are an advanced standing applicant who has earned less than 12 units of college credit subsequent to high school graduation, you must submit scores from the following examinations of the College Entrance Examination Board: (1) The Scholastic Aptitude Test; and (2) three Achievement Tests, which must include (a) English composition, (b) social studies or foreign language, and (c) mathematics or science. If your scholarship average in the required high school subjects is 3.00 to 3.09 inclusive, you must score a minimum total of 2500 on the examinations.

For detailed information on these requirements, admission by examination alone, and the special scholarship requirements for nonresident applicants, consult the Undergraduate Admissions Circular.

If you do not meet the requirements for admission to freshman standing or if you cannot qualify by examination alone, you can only be admitted to advanced standing.

If you are 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, you are subject to regulations governing admission to advanced standing. You may not disregard your college record and apply for admission to freshman standing. You 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.

Admission of Nonresident Applicants The admission requirements for nonresidents differ from those for residents in that the required grade-point average is higher. For freshmen, the average is 3.4 rather than 3.0 and for advanced standing, it is 2.8 rather than 2.0. Admissions procedures and all other requirements are the same as for California residents described above. Consult the Undergraduate Admissions Circular for complete details.

Admission in Advanced Standing

The requirements for admission to advanced standing vary in accordance with your high school record. Regulations applying to admission in advanced standing are as follows:

Those eligible for admission from high school, but who attended another collegiate institution, must present from that institution a statement of good standing and a grade-point average of 2.0.

Those ineligible for admission from high school because of subject deficiencies may establish eligibility by taking, at an accredited college, the required courses, and by maintaining an average of 2.0.

Those ineligible for admission from high school because of grade-point deficiency, may establish eligibility by taking, at an accredited college, a minimum

* The advanced standing requirements for admission listed here are experimental and will be in effect for applicants applying to terms from the Fall Quarter 1973 through the Spring Quarter 1977.
Admission in Advanced Standing for Nonresidents  A nonresident applicant who met the admissions requirements for freshman admission must have a grade-point average of 2.8 or higher in the college courses he has taken that are accepted by the University for transfer credit.

If a nonresident applicant was lacking any of the required subjects in high school, he must complete college courses in those subjects with a grade of C or higher. A nonresident applicant who graduated from high school with less than a 3.4 grade-point average in the subjects required for freshman admission must have completed at least 84 quarter units (56 semester units) of transferable work with a grade-point average of 2.8 or higher. Upon successful completion of that work, two units of the required high school subjects may be waived. Consult the Undergraduate Admissions Circular for complete details.

Special Admission Circumstances

Certain rules apply for special applicants not included above.

Limited Status  This includes applicants with a bachelor's degree or with a substantial amount of college work completed with a satisfactory scholastic average, whose special attainment may lead them to take certain courses toward a definite and limited objective. Only applicants of unusual merit are considered. Applicants for admission in limited status will normally have to complete a personal interview with an Admissions Officer, who will determine, from the applicant's record, his needs, and his plans, the conditions of his admission, subject to approval from the dean of the applicant's college or school.

Admission is for a specified time, determined beforehand, and the student must maintain a prescribed scholastic average. There are no "special courses"; the student will be admitted only to those courses for which he is able to demonstrate, in the opinion of the instructor, satisfactory preparation. Remember that many courses in engineering and professional fields require extensive, and often highly specialized, preparation.

The applicant must submit transcripts of records from all schools attended since the eighth grade.

Special Status  This includes students of mature years (minimum age 21) who have not had the opportunity to complete a satisfactory high school program or have not completed a substantial amount of college work, whose special attainments may lead them to take certain college courses toward a definite and limited objective. Similar rules apply as for students in limited status, discussed above. Applicants to special status directly from high school are not accepted. One may not be admitted to special status for the purpose of making up requirements for admission to regular status.

Work Toward a Second Bachelor's Degree  Ordinarily this is discouraged by the University, but complete changes in objective occasionally require the attainment of a second bachelor's degree. Applicants for admission to undergraduate
study for a second bachelor's degree must indicate, by their previous scholastic record, a strong probability of academic success in such an undertaking. Admission is subject to approval of the Admissions Officer and of the dean of the college or school in which work is to be undertaken.

**Students from Other Countries**

An applicant from another country should request the brochure, *Information for Prospective Students from Other Countries*, designed to answer questions about admission to the University, visas, special examinations, fees and expenses, housing, and travel.

**Registration**

Registration is the means by which you officially become a student at the University. It includes the payment of registration and other fees and the completion and filing of informational forms. It is accomplished by mail. New and re-entering students receive information and instructions for registering by mail some time in advance of the quarter for which they have been admitted. The instructions include a mailing deadline which should be carefully observed. Registration in person at the opening of the quarter may involve a late registration fee of $25. Late registration also increases your difficulties in obtaining a suitable program of classes. Your name is not entered on class rolls unless you have completed registration according to regulations. You may not register after the second week of classes. You may not plead lateness as an excuse for neglecting assigned classwork—for which you are held accountable from the first day of classes.

**Medical Requirements**

All students who are new to the Berkeley campus and those re-entering after an absence of more than five years are required to complete a detailed medical history form, with a 2½” square, full face passport-type photo attached to the Physical Examination form, as well as proof of tuberculosis screening within the past year. The purpose of the medical history is to aid the professional staff of the Health Service in caring for the student if care becomes necessary. The photograph must be provided for positive identification and protection of the student’s health record. It is required that the student present certification of a negative tuberculin skin test within the past year; or, if he/she has a history of a positive skin test, a physician’s report of a negative chest x-ray within the past year must be submitted. There is space provided on the physical examination form for certification of tuberculosis screening clearance. For the well-being of the student, it is strongly recommended that he/she have a physical examination before coming to the University. Therefore, students accepted for admission are mailed a University of California physical examination form in addition to the required medical-health history form. Forms are to be completed and returned by mail, or presented in person, to Window 104, Cowell Memorial Hospital, University of California, Berkeley, California, 94720. Forms are not
 mailed to addresses outside the United States. Students who do not receive their forms before the official opening day of the term should obtain them immediately at Window 104, Cowell Memorial Hospital, as requirements must be completed by the 10th day of classes.

Summer Session students who are subsequently admitted to a fall, winter, or spring quarter must complete the same medical requirements as other students who are "new" or "re-entering" after an absence of more than five years.

Reduced fee program students ("new" students to the Berkeley campus and those "re-entering" after an absence of more than 5 years)* are not required to complete a medical history, but must present to Cowell Hospital, Window 104, tuberculosis screening clearance.

Registration at the University may be invalid without completion of medical requirements.

All students who have paid the full University Registration Fee are eligible for health service from the first to the last day of the term in which they register, or to the date of official withdrawal if they withdraw prior to the end of the term.

**Nonresident Tuition Fee**

Students who have not been legal residents of California for more than one year immediately prior to the residence determination date for each quarter in which they propose to attend the University are charged, along with other fees, a tuition fee of $500 for the quarter. The residence determination date is the earliest opening day of the term on any of the University of California campuses.

Legal residence is established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home. The prior legal residence must be relinquished, and steps must be taken at least one year prior to the quarter to evidence the intent to make California the permanent home. Some of the relevant indicia of an intention of California residence are: voting in elections in California and not in any other state; satisfying resident California state income tax obligations on total income; establishing an abode where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; maintaining permanent military address or home of record in California if one is in the military service, etc. Conduct inconsistent with the claim of California residence would include, but not necessarily be limited to, the following: maintaining voter registration and voting in person or by absentee ballot in another state, if the basis of the franchise is legal residence; obtaining a divorce in another state; attending an out-of-state institution as a resident of the state in which the institution is located; obtaining a loan requiring legal residence in another state.

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of his stay in California. In general, the unmarried minor (a person under 18 years of age) derives legal residence from his father (or from his mother if the father is deceased), or, in

* This regulation does not apply to advanced graduate students who have secured permission to pay reduced fees while residing outside the State of California for an entire quarter.
the case of permanent separation of the parents, from the parent with whom the minor maintains his place of abode. A man or a woman may establish his or her residence.

A student who is a minor and remains in this state after his parent, who was a resident of California but has established residence elsewhere, shall be entitled to retain residence classification until one year after the student turns eighteen, thus enabling the student to establish residency, so long as continuous attendance is maintained at the University.

Nonresident students who are minors or 18 years of age and can evidence that they have been totally self-supporting through employment and actually present in California for the entire year immediately prior to the opening day of the quarter and have evidenced the intent to make the state their permanent home may be eligible for resident status.

Exemption from payment of the nonresident tuition fee is available to the natural or adopted child, stepchild, or spouse who is a dependent of a member of the armed forces of the United States stationed in California on active duty; such residence classification may be maintained until the student has resided in the state the minimum time necessary to become a resident, so long as continuous attendance is maintained at the University. If the member of the armed forces is transferred on military orders to a place outside of the United States immediately after having been stationed on active duty in California, the student who is the natural or adopted child, stepchild, or spouse dependent on the member of the military, is entitled to residence classification under conditions set forth above.

A student who is a member of the armed forces of the United States stationed in California on active duty, except a member of the armed forces assigned for educational purposes to a state-supported institution of higher education, shall be entitled to residence classification until he has resided in the state the minimum time necessary to become a resident.

A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States; provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States; provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.

Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties, may be entitled to residence classification.

A student in continuous full-time attendance at the University who had resident classification on March 7, 1973, shall not lose such classification as a result of the adoption of the uniform student residency law on which this catalogue
statement is based, until the attainment of the degree for which he or she is currently enrolled.

New and returning students are required to complete a Statement of Legal Residence, a form that is issued at the time of registration. Their status is determined by the Attorney in Residence Matters’ Deputy who is located in the Registrar’s Office.

The student is cautioned that this summation regarding residency determination is by no means a complete explanation of the law. The student should also note that changes may have been made in the rate of nonresident tuition and in the residence requirements between the time this catalogue statement is published and the relevant residence determination date. As this catalogue statement is written, regulations are in the process of adoption and will serve to implement the uniform residency determination law enacted in Statutes 1972, Chapter 1100 (AB 666) as adopted by the Regents. A copy of the Regents’ regulations is available for inspection upon request being made to the Attorney in Residence Matters’ Deputy in the Registrar’s Office.

Those classified incorrectly as residents are subject to reclassification as nonresidents and payment of all nonresident fees. If incorrect classification results from false or concealed facts, the student is subject to University discipline and is required to pay all back fees he would have been charged as a nonresident. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters’ Deputy.

Inquiries from prospective students regarding residence requirements for tuition purposes should be directed to the Attorney in Residence Matters, 590 University Hall, 2200 University Avenue, Berkeley, California 94720. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes. Any student, following a final decision on residence classification by the Attorney in Residence Matters’ Deputy on the campus attended by the student, may make written appeal to the Attorney in Residence Matters at the above address within 120 calendar days of notification of the final decision by said Residence Deputy.

Enrollment in Classes and Filing the Study List

You should purchase from the Registrar’s Office, for 25 cents, the Schedule and Directory, listing all courses given for the quarter, their credit values, instructors, hours, locations, and final examination groups. From this booklet, and with the aid of your adviser and this catalogue, which provides course descriptions and prerequisites, you may assemble your program. You may not choose two courses in the same examination group. Usually courses in the same group meet at the same hour, thus precluding such a problem.

In order to complete your enrollment and receive credit for the work of a quarter, you must file your study list at the time and place designated by the Registrar’s Office. Students should arrange for conferences with advisers, review the program of studies they wish to undertake, and make their final choice of courses well in advance of the assigned date for filing of their study lists. Students who fail to do this may be forced to file their study lists late and may become subject to the $10 late filing fee. The study-list form is included in the packet
issued to you when you register, along with instructions for completing it and filing it. There is a $10 fee for filing after the assigned date, and no study list is accepted after the third week of instruction. Unapproved withdrawal from, or neglect of, a course entered on the study list could result in disciplinary action. If you wish to make any changes of program after filing the study list, you must do so by formal petition with the signed approval of the instructor involved and the dean of your college or school.

The Quarter System

The 1973–74 school year will consist of three ten-week quarters and two six-week summer sessions. There will not be a summer quarter in 1974. A student making normal progress toward the bachelor’s degree attends three quarters per school year.

A student proceeding to the bachelor’s degree in four years (twelve quarters) will normally complete a total of 180 units, or 15 units per quarter. This number may be slightly higher in some professional colleges and schools. Students are normally considered to have upper division or junior standing after completion of 90 units.

Courses and Units

Most University courses are assigned a unit value. One unit represents three hours of work per week by the student, including both class attendance and preparation. Laboratory, discussion, quiz, or review sessions may or may not be given unit value.

Grades and Grade Points

Every student at the University will have his course work reported in terms of the following letter grades. Passing: A (excellent); B (good); C (fair); D (barely passing). Not passing: F (failure). Undetermined: incomplete, symbol I (student’s work of passing quality, but incomplete). Other symbols used: P (passed without definite grading at a level of performance corresponding to letter grade C– or better); S (satisfactory without definite grading); NP (not passed); U (unsatisfactory without definite grading); IP (in progress; final grade to be assigned upon completion of entire course sequence). For each unit of credit, grade A is assigned 4 grade points; B, 3 points; C, 2 points; D, 1 point; no grade points attach to other grades or symbols. The passing grades A, B, C, and D may be modified by plus (+) or minus (–) suffixes. “Minus” grades carry three-tenths grade point less per unit, and “plus” grades, three-tenths grade point more per unit, except for the A+ which carries 4.0 grade points per unit as does the A.

The numerical values, or grade points, given above are intended to provide a more exact determination of a student’s scholarship. To compute the grade-point average for course work at the University of California, the point value of each grade is multiplied first by the unit value of the course to obtain a total of all grade points earned. That total is then divided by the total units undertaken, exclusive of courses in which P, S, NP, U, or IP were assigned. The resulting figure is the grade-point average.
Only courses for which grades D, F, or not passed were received may be repeated for credit—and not more than once, unless authorized by the appropriate dean. On course repetitions, the units are applied toward a degree only once, but the grade assigned at each enrollment shall be permanently recorded. A course in which grades D or F were assigned may not be repeated on a passed/not passed basis.

In computing the grade-point average of an undergraduate who repeats courses in which he received D or F, only the most recently earned grades and grade points shall be used for the first 16 units repeated. In the case of further repetitions, the grade-point average shall be based on all grades assigned and total units attempted.

To replace a grade of incomplete, a student must take an examination equivalent to the final examination, or complete any other assignment required by the instructor. On the instructor's recommendation and the permission of the dean of his college, school, or division, the student may receive grade points upon successful completion of the course. He must obtain, therefore, before finishing the work, the petition forms from the Registrar; secure the required endorsements; and file the petitions as directed. The fee for filing the petitions is $5, regardless of the number of courses entered. The foregoing procedures also apply to former grade E.

**Minimum Scholarship Requirements**

Failure to maintain a minimum grade-point average prescribed by the college or school will normally result in probation or dismissal. Computation of the grade-point average includes courses graded incomplete. Since scholarship rules are applied only at the close of regular sessions, grade points earned in a University of California summer session or by removing grade I are not taken into consideration until the close of the student's next quarter of attendance.

**Academic Probation**

Except in the Colleges of Chemistry and Engineering, a student is placed on academic probation if at the end of any term his cumulative grade-point average is less than 2.0 (C average) computed on the total of all courses undertaken in the University. In addition, a student in the College of Environmental Design will be placed on academic probation if during any term he fails to attain at least a C average in all courses for which he is enrolled.

**Academic Disqualification**

College of Chemistry and College of Engineering: A student shall be subject to disqualification from the university (a) if during any term he fails to attain at least a C average in all courses for which he is enrolled; or (b) if at the end of any term he has failed to attain at least a C average in all courses undertaken in the University.

College of Agricultural Sciences, College of Letters and Science, and School of Business Administration: A student is subject to disqualification (a) if his
grade-point average falls below 1.5 for any term; or (b) if after one term on probation he increases his grade-point deficit; or (c) if after two terms on probation he has not achieved a grade-point average of 2.0 (C average) computed on the total of all courses undertaken in the University.

All other Colleges and Schools: A student is subject to disqualification (a) if at the end of any term his grade-point average for that term is less than 1.5; or (b) if he has completed two consecutive terms on academic probation without achieving a cumulative grade-point average of 2.0 (C average) computed on the total of all courses undertaken in the University.

A disqualified student may appeal, by formal petition to the dean of his college or school, for a hearing, but the action of disqualification is normally considered final. A disqualified student who wishes to transfer to another college or school at Berkeley may petition the dean of the jurisdiction sought.

Honors

Standards for honors status are set by the colleges and schools, and departments may, in addition, recommend students for inclusion on the Honors List. Honor students are usually accorded special privileges, including eligibility for honors programs. If you have an overall grade-point average of 3.5, you are accorded, through the Committee on Prizes, access to the Main Library loan stacks. For details on honors, please consult the college, school, or department.

Midterm and Final Examinations

The number of midterm examinations varies at the discretion of the instructor. Final examinations, however, are mandatory in undergraduate courses, with the exception of courses listed in the Schedule and Directory as not requiring a final examination, and in the case of a student graduating at the end of the quarter who is being examined in his major by his department and may, at the department's discretion, be excused from finals in all courses within the department.

Final examinations are normally in written form and may or may not cover the entire course. You may, if you wish, inspect a file of sample examinations, listed by course, in the Reserve Book Room of the Library. Examinations in non-laboratory courses may not exceed three hours. Any infringement of fair examination practice by a student is considered a serious offense subject to discipline.

You may be re-examined only to raise grade I or E to passing, not to raise any other grade.

Credit by Examination

A student may earn credit by examination by two methods:

1. On recommendation of the Board of Admissions, a new or re-entering student may be allowed credit by examination for knowledge he has acquired since graduation from high school, either by independent study or at another institution, and for which he has not been allowed advanced standing credit. Application for such credit should be made directly to the Admissions Officer at Berkeley.
2. A student in good standing who is currently registered may qualify for course credit by examination. Application for such credit must be presented on a form, obtainable from the Registrar, to the dean of the college or school. Credit by examination may be applied for in any course listed in the current General Catalogue pertaining to the regular sessions at Berkeley, or in any other subject appropriate for inclusion in a University curriculum. However, the subject in which the student seeks to be examined should be one in which, in the opinion of the instructor in charge and of the department, the student's knowledge may properly be tested by an examination. The fee for filing the petition is $5. In certain laboratory, field, or practice courses an examination either written or oral may not be a satisfactory test. Credit by examination is not available if such credit would duplicate credit presented by the student for admission to the University; in elementary courses in a foreign language which is the mother tongue of the applicant; or in subjects for which the University has no competent examiner. Further information concerning credit by examination may be obtained from the Registrar.

Passed or Not Passed Credit

A student must be in good standing in order to enroll in courses on a passed or not passed basis. Credit for courses graded passed may be assigned for no more than one-third of the total units undertaken and passed on the Berkeley campus at the time the degree is awarded. This limitation applies to courses completed for credit after September 1970. Included in this one-third will be half-unit physical education and Music 400 series courses, as well as any units completed on another campus by a Berkeley student enrolled in an Intercampus Visitor Program.

A course which is required in the major or which is prerequisite to the major may be taken on a passed or not passed basis only upon the approval of the faculty of the student’s college or school.

A student enrolled in a summer session may take no more than one course on a passed or not passed basis. Half-unit courses in physical education and music are excluded from this restriction.

A special student or limited status student must obtain the approval of the dean of the school or college in which he is enrolled in order to take a course on a passed or not passed basis.

A student’s level of performance must correspond to letter grade C- or better if a passed grade is to be assigned.

A student may not repeat on a passed or not passed basis a course in which he received a D or F, or an Incomplete unless the Incomplete was assigned in a course undertaken on a passed or not passed basis.

The option of being graded passed or not passed in a particular course may be withdrawn if the student is found to be ineligible to take the course on that basis.

These rules are subject to such other limitations as may be imposed by the faculties of the various schools and colleges.
Student Conduct

As a student enrolling in the University, you assume an obligation to conduct yourself in a manner compatible with the University’s function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities, and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of Student Relations and Programs, 201 Sproul Hall, and at the Office of the Coordinator of Facilities and Regulations, 225 Sproul Hall. Particular attention is called to the booklet University of California Policies Relating to Students and Student Organizations, Use of University Facilities, and non-Discrimination and to the standard of conduct set forth therein.

Cancellation of Registration, Absences, Withdrawal, and Re-Entry

A student who has registered and wishes to cancel his registration may do so provided he notifies the Registrar in writing prior to the first day of classes of the quarter. Cancellation of registration may not be accomplished by nonattendance at classes alone. If you request cancellation of your registration or you withdraw before the first day of instruction there is a service charge of $10. After the first day of instruction your fees are pro-rated depending on the date of your withdrawal.

Responsibility for short absences is largely left up to you. For absences of five days or longer during the quarter, you must apply to the Office of Student Relations and Programs for a Leave of Absence. Permission to withdraw entirely from the University, without scholarship penalty, is usually not granted after the first few weeks of the quarter, except under unusual circumstances. If circumstances prevent further class attendance, you should notify the Registrar in writing immediately. Upon written approval of the Office of Student Relations and Programs and also the dean of your college or school, provided you are eligible for further registration in the University and are not under disciplinary disqualification, you will be entitled to a statement of honorable withdrawal. You may also obtain a statement of honorable withdrawal at the close of any quarter, under the same circumstances. You must not discontinue schoolwork without formal notice. This may result in academic disqualification and loss of eligibility for readmission.

A student who has been disqualified for academic or disciplinary reasons is generally not eligible for readmission. If you have cancelled your registration, withdrawn, or have been absent for any quarter, you will be required to apply for readmission to the University for any future quarter you wish to attend. The Application for Readmission, which may be obtained from the Office of the Registrar, must be accompanied by a nontransferable, nonrefundable Readmission Fee of $20 when first submitted. It will not be considered until the fee has been paid.

Progress Toward the Degree

Declaration and Change of Major Regulations and procedures for declaring the major vary for each college. You may, at any time up to the last quarter of resi-
dence, file a petition for a change of major. You must secure approval for this action from the dean or other authorized person in the college or department to which you are transferring.

**Work Toward a Degree** At the close of each quarter, the courses, units, grades, and grade points earned are added onto your cumulative University record. From this record, you may determine your progress toward a degree. Also at the end of each quarter, a Grade Report which indicates the grade and grade points you received for each course you took is issued to you at a time and place designated by the Registrar.

Transcripts of the records—useful and usually necessary in applying to graduate school and for certain types of employment—are available from the Registrar. After the last date for final examinations, transcripts of record for registered students must be held for the inclusion of grades for the quarter and, therefore, will not be available for approximately 25 working days. Partial transcripts will not be issued. At times other than the close of the quarter, the normal period required for the processing and issuance of transcripts for both registered and former students is four to five working days. The charge for each transcript of every undergraduate, graduate, or separate summer session record is $2, and $1 for each additional transcript requested at the same time. The total amount due must accompany the application.

In working for a degree, you should keep in mind the various levels on which you are to satisfy requirements—University, college or school, and department—as well as the types of requirements you must fulfill: course, unit, grade point, and amount of upper division work. You may receive additional counsel in these matters from your adviser.

**College and School Requirements** Every college and school has established a program of requirements for the degree, which may be in addition to those of a field of concentration. These requirements may include: (1) preparatory subject requirements for admission; (2) preparatory college-level courses for your particular field of study—to be completed, if possible, during your early period of residency in the college or school, or in some cases before entrance; (3) breadth requirements, courses outside the field of study, considered essential to a well-rounded curriculum; (4) the credit requirement, which is a total number of units to be completed, with specifications of how these credits are to be distributed; and (5) a minimum scholarship requirement. For detailed information you should obtain a copy of the bulletin of your school or college.

**The Major and the Department** Every student must select a field of concentration, and pursue a major or curriculum, normally by taking a minimum number of units in one department or school. Occasionally—as, for example, with Business Administration, Optometry, Criminology, and others—the school and the department are synonymous. In some cases—as, for example, the humanities field major in the College of Letters and Science—a major may embrace more than one department.

**Declaration of Candidacy** You must file an announcement of candidacy for a degree with the study list at the beginning of the quarter in which you expect
to complete the work for the degree. The announcement is accepted no earlier than this period. The period for filing announcements ends with the third week of classes. (Announcements filed late are subject to a $3 late fee.) If for any reason you do not meet the requirements for graduation after announcing your candidacy, you must file a new announcement of candidacy in the period for filing in the subsequent quarter when the degree will be awarded.

**Residence Requirement for the Bachelor's Degree** After 135 units toward the bachelor's degree have been completed, at least 36 of the remaining units must be completed in residence in not less than three quarters in the college or school of the University in which the degree is to be taken. These 36 units must be completed in the quarter in which 135 units are exceeded plus not fewer than two additional quarters. At least two of the final quarters must be consecutive. You should consult the announcement of your college or school for details concerning the senior residence requirement as it pertains to the summer sessions.

**Preparation for Graduate Study** If you are preparing for study toward higher degrees, you should learn, as early as possible, the entrance and degree requirements of your graduate field, in order to include all prerequisite steps in the undergraduate program.

**Two General University Requirements**

There are two requirements—beyond those set by the college, school, or department—which all undergraduates registered in the University must satisfy in order to graduate. Subject A and American History and Institutions are considered essential to your education, regardless of your academic or professional objectives.

**Subject A** This requirement is based on the principle that a University student must demonstrate reasonable proficiency in English composition to succeed in college-level work. Satisfying the requirement is a prerequisite to many courses, including all first-year composition courses. All University departments assume that the student has mastered the elementary principles of composition and can write with a minimum of gross errors in sentence structure, grammar, punctuation, and spelling. The Subject A Department's course “Introduction to Language” is designed to help those students who are deficient in composition.

A student entering as a freshman will have taken the English Composition Test of the College Entrance Examination Board. If his score on this test is below 550, he must enroll in the Subject A Department's course *during his first term of residence at the University*. This is a 2-unit credit course for which a fee of $45 is charged.

An entering freshman may also meet the requirement by presenting a score of 3, 4, or 5 on the College Board Advanced Placement Test in English.

Any student may meet the requirement by presenting evidence of completion of an acceptable college-level course in English composition taken at another institution, provided the grade is C or better.

Any entering student who has not met the Subject A requirement by these means may, *prior to* entering the University, make arrangements with the Edu-
cational Testing Service to take the English Composition Test of the College Entrance Examination Board at his own expense and to have the result sent to the Admissions Office of this campus. If the student achieves a score of 550 or above, he will be considered to have satisfied the Subject A requirement; if his score on this test is below 550 or if he does not take the test, he must enroll in the course offered by the Subject A Department during his first quarter at the University.

American History and Institutions  These requirements are based on the principle that an American student enrolled at an American university should have some acquaintance with (1) the history, and (2) the public institutions of his country. These requirements may be met in the following six ways:

1. By passing two examinations, one in each of these subjects. If you wish to take either or both examinations, you should obtain details at the American History and Institutions Office, Room 104, Bldg. T-4.

2. By presenting official evidence of completion of the same two requirements at another college-level institution in California.

3. By completing one quarter of a course in each of the two groups given below (or, on approval of the Supervisor of American History and Institutions and dean of the college or school at Berkeley, any comparable courses offered at another college-level institution, or University Extension):


4. By mixing alternatives 1, 2, or 3 for either requirement. You may choose an examination in either one, or complete a course in either one, or submit evidence of equivalency for either one.

5. By completing the first two quarters of the Experimental College Program dealing with American Studies.

6. The American History part of the requirement can be fulfilled by passing the Advanced Placement Test in American History with a grade of 3, 4, or 5.

* Approximately 10 sections of Political Science 1 taught each quarter. Content varies. Determination of credit decided each quarter for individual sections. Contact the Political Science Department for information.
No Advanced Placement Test exists at this time in American Institutions, so this part of the requirement cannot be fulfilled by this means.

The requirements will be waived for foreign students who, in the course of their registration, have submitted to the Registrar for inspection travel documents certifying that they hold student (F) or exchange visitor (J) visas. Those who wish to verify that the waiver has been granted may call at the Office of the Registrar, 120 Sproul Hall, for confirmation, preferably no earlier than the close of their second quarter of attendance.

All students are advised that fulfillment of these requirements is the responsibility of the individual student, and preferably should be completed by the end of the junior year.

Students wishing to complete the requirements by enrolling in courses should check the American History and Institutions Office prior to enrollment for possible policy changes made after this catalogue was printed.
Graduate study embraces all study for degrees and certificates beyond the bachelor's degree—principally the master's and doctor's degrees—and is administered by the Graduate Division under the policies and regulations established by the Graduate Council of the Berkeley Division, a standing committee of the Academic Senate. Higher degrees fall into two broad categories: (1) Professional—degrees awarded by each of the professional colleges and schools on the Berkeley campus in recognition of a candidate's command of a comprehensive body of professional knowledge and his ability to organize and carry out investigation of significant problems in his field. (2) Academic—degrees awarded by the academic departments, and also some professional schools, in recognition of a candidate's command of a wide range of related subjects within an academic field, his preparation in one or more foreign languages, and his ability to pursue original research leading to a contribution of significant ideas to his field of study.

These graduate degree programs have been approved by the Graduate Council and the Coordinating Committee on Graduate Affairs. Others may be instituted only with the consent of these bodies. For a list of graduate degrees offered, see page 48.

**Admission to Graduate Study**

Completed applications for admission, as well as all additional documents specified on the application form (including transcripts from each college-level institution previously attended), and a fee of $20°, must be filed with the Graduate Admission/Fellowship Office by the established deadlines.

The final dates for acceptance of applications for admission for the 1974–75 academic year are: fall quarter, March 1; winter quarter, September 1; and spring quarter, December 1. The School of Law admits only for the fall term; the deadline is March 1.

Many departments have established earlier final application dates of their own, both with respect to admission and to financial assistance. When this is the case, materials must be in both the department and the Graduate Division by the departmental deadline date if the application is to be considered. Many departments also admit students only for the fall quarter of the year. Information on special departmental deadlines and requirements is contained in the application packets.

Under the Master Plan for Higher Education in California, there are limitations on enrollment at each public institution. Consequently each graduate program at Berkeley has a maximum enrollment that may not be exceeded. Almost invariably, this maximum is smaller than the number of persons who are at least minimally qualified to enter the program, and selection procedures are designed to admit applicants in accordance with their relative merit and promise,

° Fees are subject to change.
for the particular program, among those at least minimally qualified. Therefore
the competition for admission is severe, and it is to the applicant's advantage to
make early inquiry about the possibility of study at Berkeley.

**Admission Requirements** The University requires of the applicant the fol­
lowing: (1) a valid degree from an accredited institution, comparable to the
bachelor's degree offered at Berkeley (occasional exceptions may be made for
persons holding a professional baccalaureate and desiring entrance only into a
corresponding graduate professional program); (2) sufficient undergraduate train­
ing to undertake graduate study in his chosen field; and (3) a satisfactory scho­
lastic average. Since the methods of determining eligibility vary with each pro­
gram, an extensive evaluation of the university record(s) and the supporting
materials of each applicant is necessary.

A satisfactory score on the Graduate Record Examination (administered by the
Educational Testing Service), though not required for admission to the Graduate
Division in general, is required by some departments and schools on campus. If it is required, the score should be forwarded to the applicant's proposed school
or department and not to the Graduate Admission/Fellowship Office.

In addition to the general University requirements, certain schools or depart­
ments may require additional records, such as separate applications, reading
lists, examples of original work, or qualifying examinations. Information on
undergraduate requirements for a major field and on graduate programs and
requirements is available in the school or departmental announcements and
bulletins, and in the "Courses and Curricula" section of this catalogue.

**Notification of Action on Admission** Only a written notice from the Dean of
the Graduate Division, not letters from departments or faculty, is valid proof of
admission. Admission to graduate study is limited by the number of places avail­
able in the various schools, colleges, and departments of the University. Admis­sion committees base recommendations for admission upon careful comparison
of applications; thus, there is frequently a considerable but unavoidable delay
before final action is taken. Applicants for admission and fellowship considera­tion will be notified on or about April 1 of the action on their applications. Applicants for admission only will be advised as soon as possible after a decision
to admit or to deny admission has been reached. Normally, however, acceptance
letters for applicants for admission only will not be issued until after March 1
for the fall quarter, July 1 for the winter quarter, and October 1 for the spring
quarter.

**Reactivation of Application** An applicant who changes his plans and with­
draws his application from consideration for a particular quarter will have all of his ma­
terials kept on file for a maximum of two years following his first application. He
may reapply for any quarter within the two years by notifying the Graduate Ad­
mission/Fellowship Office to reactivate his file prior to the application dead­
line date for that quarter and by providing a current application, if required,
together with records of any academic work completed since he first applied.
If he previously paid only the $10 application fee, he must remit another $10,

* Not to be confused with readmission. Readmission applies to students who have been registered
in graduate standing at Berkeley and are seeking to return after an absence. See page 32.
since the total fee has been raised to $20. For application after the two-year limit, he will have to file a new application form (with the $20 fee) and supply a new set of records and supporting materials.†

**Statement of Firm Intent to Register and Failure to Register** The admission notices of new (including reactivating) graduate students contain a “Statement of Firm Intent to Register” which must be filled out and returned to the Graduate Admission/Fellowship Office by the date indicated thereon. Only the return of this form to the Graduate Admission Office will reserve the allocated registration place for the successful applicant, not notification to the department, group, or other offices. Applicants wishing to retain a record of the return of their Statement should send it by certified or registered mail. Registration places will not be reserved for successful applicants who do not return the Statement. The Statement should also be returned by successful applicants who do not wish to accept admission, with this indicated so that their place can be reallocated. Students who fail to return the form and fail to register for the quarter in which they are admitted must file for reactivation, as previously described, if they wish to attend any subsequent quarter. They have no priority over other applicants for any subsequent quarter by virtue of their previous admission.

**Foreign Applicants** In addition to the admission requirements set forth previously, foreign students are expected to have an excellent command of English before beginning studies at Berkeley, since no student is admitted to the University for the purpose of learning English. Prior to arrival in Berkeley, and as a requirement for admission, applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service. Results must be forwarded to the Graduate Division Office. After arrival in Berkeley, these students may be required to take the University Examination in English for Foreign Students.

A special course in English for Foreign Students is normally offered each summer. Interested persons should write for information to the Office of English for Foreign Students, 2241 College Avenue, University of California, Berkeley, California 94720.

**Accommodation of Postdoctoral Fellows and Visiting Scholars.** A prospective fellow or scholar should communicate with the chairman of the department, school, or research unit with which he wishes to be affiliated to determine whether the facilities he requires are available and whether he would be eligible for an honorary appointment. With rare exceptions, visiting scholars must hold the doctoral degree or its equivalent. Visiting scholars may not be students enrolled at or on leave from another institution of higher education nor candidates for a graduate degree.

**Intercampus Exchange Program** A graduate student registered on any campus of the University may go to another campus of the University as an Intercampus Exchange Graduate student with the approval of his adviser, the chairman of the department in which study is proposed, the Dean of the Graduate Division on his home campus, and the Dean of the Graduate Division on the campus

† Fees and conditions of reactivation are subject to change.
visited. This program will also include those students who take courses on more than one campus of the University in the same quarter.

Application forms for the Intercampus Exchange Program for Graduate Students may be obtained from the Office of the Dean of the Graduate Division on the student’s home campus. To avoid penalties for late filing of the study list, the application form should be completed and filed at least three weeks before the opening of the quarter of enrollment in the program.

It is anticipated that this privilege will be used by graduate students who seek the opportunity for association with certain scholars or with fields of study not available on their home campus, or who seek the use of special facilities and collections. Whenever possible, personal arrangements between faculty members on the two campuses should be made so as to insure that the courses, seminars, or facilities will be available to meet the student’s needs. This privilege will be granted where evidence of serious and high-quality scholarship is available.

Although he registers and pays fees on the home campus, the Intercampus Exchange Student will have library, infirmary, and other student privileges on the host campus. He should make arrangements with the Registrar to follow the enrollment procedures of the host campus so that grades obtained in courses he takes will be transferred to his record on the home campus. An exchange student is considered a graduate student in residence on his home campus. He has not transferred his enrollment, and he is not admitted to the graduate school and department of his host campus as a graduate student of that campus. Unless specifically restricted, holders of fellowships may participate in the Intercampus Exchange Program.

General Regulations and Procedures

Graduate Advisers

Graduate advisers are appointed by the Dean of the Graduate Division from nominations sent to him by each academic department and group and by each professional school. Advisers’ names are announced before the opening of each quarter. The responsibilities of the graduate adviser include: (1) assisting graduate students in selecting a program of study toward a degree, (2) reporting to the Dean of the Graduate Division on the acceptability of upper division and graduate courses completed by a candidate at other institutions, (3) endorsing applications for candidacy for higher degrees and for qualifying examinations, (4) acting on petitions by graduate students, (5) maintaining records of all graduate students enrolled under his jurisdiction, (6) supplying information requested by the Dean of the Graduate Division regarding a student’s work and progress, and (7) assisting the Dean in the enforcement of all regulations applying to graduate study, particularly those relating to admission to graduate courses and maintenance of acceptable scholastic performance. The graduate adviser is the deputy of the Dean of the Graduate Division and the chief representative of the department or school in all matters related to graduate study, and his signature is recognized as expressing their official decisions.

Graduate students also have individual advisers, invariably after they have been advanced to candidacy for the doctorate and frequently even in the earlier
stages of their training. These individual advisers may or may not be the same as the official Graduate Adviser who is the Dean’s deputy. All graduate students should keep in close touch with their individual advisers and must confer with the official Graduate Adviser at the beginning of each quarter to obtain his approval of their program of study (by his signature on the Study List).

**Foreign Student Adviser** Foreign students must consult with the Foreign Student Adviser at International House as soon as possible after arrival in Berkeley.

**Registration** Every graduate student in good standing, unless granted an honorable withdrawal by the Dean of the Graduate Division, will be required to register with the Registrar of his campus each quarter until the completion of all requirements for the degree for which he is working. Failure to register or to obtain formal permission to leave the University will constitute presumptive evidence that a student has withdrawn from the Graduate Division. No graduate student may fail to register in any quarter without having first obtained a formal release in the form of an honorable withdrawal; failure to register without such formal release constitutes voluntary withdrawal from the University and precludes readmission. The requirement of full-time continuous registration for graduate students is satisfied by attendance in the three quarters of an academic year. A student is required to be registered or pay the filing fee, whichever is applicable, for the quarter in which his degree is conferred. All holders of non-immigrant visas must be registered for fall, winter, and spring quarters of each academic year unless special permission has been obtained from the Immigration Service to do otherwise. Consult the Foreign Student Adviser for further information.

Consistent with these principles, graduate students must register in any quarter in which they are enrolled in formal courses of instruction, or making any use of University facilities, including access to the faculty, except those uses that are accorded the general public.

If a student’s studies or research require him to remain outside of the State of California for the quarter, he must file a petition for this, including a request for reduction of the University Registration Fee, with the Office of the Dean of the Graduate Division, Room 1, California Hall.

**Student Conduct and Discipline** A student enrolling in the University assumes an obligation to conduct himself in a manner compatible with the University’s function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities, and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of Student Relations and Programs, 201 Sproul Hall, and at the Office of the Coordinator of Facilities and Regulations, 225 Sproul Hall. Particular attention is called to the booklet *University of California Policies Relating to Students and Student Organizations, Use of University Facilities, and Non-Discrimination* and to the Standard of Conduct set forth therein.

**Honorable Withdrawal** If a student wishes to withdraw from the University at the end of a quarter, or finds it necessary to discontinue his studies before the
close of a quarter, he must apply for formal withdrawal. Failure to obtain this release precludes readmission. Withdrawal petitions are available from the Petitions Desk, Graduate Division, Room 1, California Hall, and are filed with the same office. During the period of absence a graduate student is exempt from all fees and is expected, in turn, to maintain no connection with the University. He may not use University facilities (except those uses accorded the general public) or place demands on faculty time. Honorable withdrawal is a privilege requiring the endorsement of the student’s department, school, or group and the Dean of the Graduate Division.

Standards of Scholarship and Dismissal for Academic Deficiencies    Only courses graded A, B, C (with or without plus or minus signs) or P are accepted in satisfaction of degree requirements. Courses graded below C– do not yield unit credit toward a higher degree, irrespective of the overall grade-point average. Graduate students must maintain a minimal grade-point average of 3.0 in all course work undertaken in graduate standing in the University of California or its exchange programs and must follow expeditiously the academic or professional program to which they were admitted or later officially transferred. Expeditious pursuit of the degree program implies full-time study unless a lesser program is approved by the Graduate Adviser, successful completion of all course work required by the departmental or group program, passage of the required examinations and other requirements as specified for the program, and advancement to candidacy as specified for the various degree programs.

For a course extending over more than one quarter, where evaluation of the student’s performance is deferred until the end of the final quarter, provisional grades of in progress (IP) may be assigned in the intervening quarters. The provisional grades are replaced by the final grade if the student completes the full sequence. If the full sequence is not completed, the Berkeley Division of the Academic Senate is authorized to regulate the award of credit.

With the consent of the department involved, graduate students may enroll in courses in the “600-series.” Such courses are evaluated by means of the grades satisfactory and unsatisfactory (S and U). They prepare students for appropriate master’s or doctoral examinations and do not count toward academic residence or the unit requirements for a higher degree. No credit is allowed for work graded unsatisfactory."

Graduate students are subject to dismissal for academic deficiencies at the discretion of the Dean of the Graduate Division under the policies and practices established by the individual faculties of departments, graduate groups, and professional schools and colleges, and under the policies established by the Graduate Council of the Academic Senate. Dismissal for academic deficiencies is normally effected by the Dean on the recommendation of the Graduate Adviser, but the Dean may initiate dismissal after his own review of the record. Dismissal for academic reasons by the Dean may be appealed to the appropriate committee of the Graduate Council of the Academic Senate.

Readmission    A student who has withdrawn for one quarter or more must file an Application for Readmission, obtainable from the Office of the Registrar, and

* For further information on grades and grade points, see page 18.
must pay a nontransferable, nonrefundable Readmission Fee of twenty dollars ($20). This fee must accompany the Application for Readmission when first submitted or the application will not be reviewed. **Approval of readmission is not automatic.** A formal review of the student's petition and academic record is made by the Graduate Division and the appropriate college, school, group, or department, and the student is notified whether the petition has been approved or denied.

**Medical Requirements** These requirements are the same for both graduate and undergraduate students. For the detailed requirements see page 14 in this catalogue.

**California Legal Residence** Students who have not been legal residents of California for more than one year immediately prior to the residence determination date for each quarter in which they propose to attend the University are charged, along with other fees, a nonresident tuition fee for the quarter. The present fee is $500 per quarter. For information pertaining to the establishment of legal residence see page 15 under the heading "Nonresident Tuition Fee" in this catalogue. All inquiries regarding legal residence requirements for tuition purposes should be directed to the Attorney in Residence Matters, 590 University Hall, 2200 University Avenue, University of California, Berkeley, California 94720. Information on waiver of the nonresident tuition fee for graduate students who are nonresidents is given on page 46 of this catalogue.

**Academic Residence** In order to meet the academic residence requirement for higher degrees—not to be confused with state residence, previously defined—every graduate student must enroll in and complete a minimum of 4 units of upper division and/or graduate courses per required quarter of academic residence. Only courses in the 100 or 200 series satisfy this requirement. (Students should also familiarize themselves with the regulations on academic residence for the individual graduate degrees.)

**The Study List and Study-List Limits** Each quarter in which he registers the student fills out a study list, entering on it all courses or any other graduate work, including thesis and/or research approved by the graduate adviser, to be undertaken for the quarter.

Courses are classified as lower division (numbered from 1 through 99); upper division (100–199); and graduate (200–299). Lower division courses are not counted as part of a full program of study leading to a higher degree. (For information on courses in the "600-series" see Standard of Scholarship on page 32.)

Teaching assistants and research assistants must normally carry a minimum of 6 units of upper division or graduate work. Fellowship holders, foreign students on nonimmigrant visas, and students subject to selective service regulations must carry a full program of study, the minimum range in such cases being from 8 to 12 units in upper division and/or graduate courses, although cognizance is taken of the amount of individual study being pursued in the form of language preparation, comprehensive and qualifying examination preparation, etc., for the Ph.D. degree. In these cases reduced unit loads are accepted as full programs with the consent of the Graduate Adviser and Dean of the Graduate Division. Formal
classification of a student’s program as full-time, three-quarter-time, half-time, or quarter-time is determined by the Graduate Adviser and entered by him on the study list each quarter. For the convenience of advisers and students a suggested maximum schedule is given below.

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Changes in the Study List  Graduate students may file petitions to add, substitute, or drop courses entered on their study lists at any time through the twentieth day of instruction. Discontinuance of a course after this time will normally result in a grade of F. In unusual circumstances, and when approved upon petition to the Dean of the Graduate Division, the penalty of an F grade may not be assessed.

The Nature of Graduate Instruction  A graduate course is a highly advanced course in a field of study already intensively presented in the upper division. Graduate courses demand, on the part of both instructor and student, either a capacity for critical analysis or a specialization of research interests not normally appropriate to an undergraduate major. These courses may be conducted in a number of ways: (1) as advanced lecture courses, (2) as seminars in which faculty and students present critical studies of selected problems within the subject field, (3) as independent study or reading courses, or (4) as research projects conducted under faculty supervision. The main purpose of graduate study is to inspire independence and originality of thought in the pursuit of knowledge. The graduate student is expected to achieve mastery of his chosen field through advanced course work and—equally important—through independent study and research. He is accorded considerable liberty in his choice of courses, at the discretion of his Graduate Adviser, as long as he meets the minimum requirements for academic residence.

Possession of a bachelor’s degree does not in itself entitle a student to enroll in a graduate course. These courses assume adequate preparation at the upper
division level in the subject field (a minimum of 18 units of upper division work basic to the subject matter of the graduate course; this basic work may be pursued in more than one department). Graduate students are encouraged, therefore, to take any upper division work that will provide them with the background needed for advanced work; they are not confined to graduate courses.

Graduate courses completed before attainment of the bachelor's degree are not acceptable for unit credit toward an advanced degree. Courses in the 300 and 400 series, which are professional in nature, are designed to meet the requirements for the various certificates and are not acceptable for unit credit as part of the program for an academic degree. They may, however, satisfy certain substantive requirements in particular academic programs, such as engagement in teaching activity or particular kinds of research or technical work.

Course Credit by Examination A graduate student in residence may petition to receive a limited amount of course credit toward his degree by passing examinations on material covered in certain courses in lieu of taking those courses. Laboratory courses or graduate seminar or research courses are excluded. The petition is obtainable from the Office of the Registrar. Approval to take such examinations must be given by the Dean of the Graduate Division and by the course instructor, or, where no instructor is designated, by the departmental chairman.

Duplication of Higher Degrees Normally duplication of degrees is not permitted. A student may petition the Dean of the Graduate Division for exception to this policy if the degree desired is in a field of study distinctly different from the field in which the original degree was attained. A professional degree is not regarded as a duplicate of an academic degree.

On the recommendation of the Graduate Adviser, and with the approval of the Dean of the Graduate Division, a student may, however, be permitted to earn a second master's degree in the same subject as that of his first master's (or in a closely allied subject), if he is enrolled in a doctoral program at Berkeley in that subject (or allied subject), and if that particular doctoral program requires that a master's degree be earned at Berkeley.

Degrees for Members of the Academic Senate A voting member of the Academic Senate may be recommended for a higher degree by a Senate Division of which he is not a member, provided that he has fulfilled all the requirements of that Division.

No voting member may be recommended for a higher degree by his own division unless, prior to the date of final action on his appointment to a rank carrying the voting privilege, the Dean of his Division has certified to the appropriate authority that he has met all the requirements for the degree. Such appointments may be retroactive.

University Extension

Upon recommendation of the Graduate Adviser and with special approval of the Dean of the Graduate Division, a student in a master's program may be permitted to transfer up to six units earned in University Extension concurrent
courses toward the unit requirement for the degree. Concurrent courses are those
courses taken on the Berkeley campus under the instruction of a regular member
of the faculty.

Requirements for the Standard Teaching Credential may be met in part by
courses offered in University Extension, as described in the Announcement of
The School of Education.

The Master's Degree

Instruction is offered on the Berkeley campus leading to both academic and
professional degrees as listed on page 48.

Specific regulations governing the professional master's degrees are set forth
in the individual Announcements of the colleges and schools. The present section
will deal primarily with the academic master's degree, though the rules
and procedures described will be of interest to candidates in all fields.

Residence Requirement  A minimum of three quarters of academic residence
(as defined earlier under Academic Residence) is required for the master's de­
gree. Specific subject requirements are set by the schools and departments.

Transfer of Credit from Other Institutions  Up to 6 quarter units (or 4 semester
units) of courses taken at other institutions may be applied toward the degree,
on approval of the Dean of the Graduate Division. These units are allowed
if earned in graduate status at an institution of high standing,* but they cannot
be used to reduce the minimum residence requirement or minimum requirement
of graduate-level units. Requests for degree credit for such courses are not
considered until a student has completed at least one half of the program for
the master's degree and is applying for advancement to candidacy. The stu­
dent's entire record must indicate superior scholarship.

Pass Grades  No more than one-third of the master's program may be fulfilled
by courses graded Pass, and then only if approved by the department or group.

Amount and Distribution of Work  Students working for academic master's de­
grees on the Berkeley campus will pursue one of two plans, as determined by the
individual department (departments may adopt either or both plans, and will, in
the latter case, designate which plan is to be followed by each student):

Plan I requires at least 30 quarter units and a thesis. At least 12 of these units must
be in graduate courses (200 series) in the major subject. Course units are not granted for
the thesis.

Plan II requires at least 36 quarter units of upper division and graduate courses, fol­
lowed by a comprehensive final examination administered by the student's department
or group. At least 18 of the units must be in graduate courses in the major subject.

Students under both plans are guided by their graduate advisers regarding
distribution of course work among the departments. Further requirements are
specified by the major department.

Advancement to Candidacy  Admission to candidacy for a master's degree is
not automatic upon completion of the degree requirements; it requires a formal

* Credit for graduate work completed on other campuses of the University of California may be
granted in excess of 6 units. Requests are handled on an individual basis.
application to the Dean of the Graduate Division that bears the approval of the student's major department or school and a precise statement of the studies on which the application is based. Application must be made not later than the end of the second week of instruction of the quarter in which the degree is to be awarded. If a student is to submit a thesis, however, he should consult his adviser about advancement to candidacy as early as possible so that the appropriate committee can be formed.

The Master's Thesis Students under Plan I, described above, must submit a thesis in typewritten or printed form (or other form deemed acceptable by the Graduate Council). If typewritten, it must be double spaced on medium weight, 8½" by 11" paper of good quality, with a minimum left-hand margin of 2". It must be unbound and without perforations, and the type must be adequate for photographic reproduction. One copy (the original, if typewritten), following approval by the student's thesis committee, is filed with the Dean of the Graduate Division. Further information regarding the organization and format of the thesis is available from that office.

The thesis constitutes a report, in as brief a form as possible, of results obtained in an original investigation of a problem. While it is understood that the problem in question need be one of only limited scope, the thesis should be comparable in style, organization, and depth of understanding to investigations of greater scope, such as the dissertations of doctoral candidates.

The thesis is submitted to a committee of three members of the faculty appointed by the Dean of the Graduate Division, with one member of the committee being chosen from a department other than that of the candidate's major subject. The candidate is required to confer with all members of his committee before undertaking the work of a thesis. Since the committee is not appointed until a student is advanced to candidacy, the student, to avoid the possibility of having to make extensive revisions, should not begin his thesis work before advancement. Responsibility for placing the completed thesis in the hands of the committee members rests with the student.

If all three members of the committee approve the thesis, they sign the official title page prepared by the Office of the Dean of the Graduate Division, where a copy of the thesis is filed for later deposit in the University Library. If any member of the committee doubts the acceptability of the thesis, the chairman convenes the committee to discuss it. If the committee then reaches agreement on its acceptability, the thesis is signed and filed as previously indicated. If there is disagreement, the thesis is sent to the Dean of the Graduate Division together with a brief statement of each committee member's opinion. If the thesis is rejected by all members of the committee, it is sent to the Dean with a statement to that effect by the committee chairman. In all cases of rejection or split vote, the Administrative Committee of the Graduate Council makes the final decision.

The Doctor's Degree

Instruction is offered on the Berkeley campus leading to both academic and professional degrees as listed on page 48. Professional degree programs are
outlined in the individual Announcements of the colleges and schools offering them. The general procedures given in this section apply primarily to the academic doctor's degree, though the information will be of interest to candidates in all fields.

The Doctor of Philosophy degree is not granted at the University of California solely for fulfilling technical requirements such as residence and completion of specified courses. The degree is awarded in recognition of a candidate's knowledge of a broad field of learning and his distinguished accomplishment in that field through an original contribution of significant knowledge and ideas. The candidate's research must reveal high critical ability and powers of imagination and synthesis.

Residence Requirement A minimum of two years or six quarters of academic residence (as defined earlier under Academic Residence) is required for the Ph.D. degree. For most students the actual period of time spent obtaining the degree, however, is close to six years.

Program of Study Programs of study for doctoral degrees are more individualized than those for master's degrees, permitting more specialization within a field or the establishment of connections among fields. Nevertheless, each aspirant must have his program of study approved by the Graduate Adviser of the department or group to which he is admitted or later transferred. As noted earlier, University policy requires continuous residence from entrance until receipt of the degree, unless a formal withdrawal is granted by the Dean of the Graduate Division.

The field of study may be in a single department, except for essential related courses in other departments, in several departments, or in an interdisciplinary group. Once he has chosen his field of study the student should confer with his graduate adviser to select the sequence of courses that will best prepare him for his qualifying examinations and his research work.

Interdisciplinary Groups The University has established graduate programs in a number of fields that cut across conventional departmental lines yet comprise definite cores of knowledge. These programs are administered by groups of faculty from several related departments and, in certain instances, from several campuses. Students enrolled in these programs can work with any faculty member in the group without having to pursue the particular discipline of the department with which the faculty member is associated. Moreover, this arrangement makes available to group students a range of facilities not ordinarily open to students enrolled in departmental programs. Since groups have no budgets or facilities of their own, however, most applicants, to be accepted by a particular group, must first obtain the sponsorship of one of its faculty members.

Following is a list of Graduate Groups on the Berkeley campus:

Group in Agricultural Chemistry
Professor John Whitaker, Davis, Chairman
Professor David L. Brink, Graduate Adviser
478 Richmond Field Station, Campus

Group in Ancient History and Archaeology
Professor Erich Gruen, Chairman
3229 Dwinelle Hall

Group in Asian Studies
Professor John B. Starr, Chairman
% Department of Political Science
210 Barrows Hall, Campus

* This is the fall 1973 listing. Chairmen for 1974–75 will be chosen in June.
Group in Biophysics, Bioradiology, and Medical Physics
Professor Cornelius A. Tobias, Chairman
363 Donner Laboratory

Group in Biostatistics
Professors E. L. Scott and C. L. Chiang, Co-Chairmen
19 Earl Warren Hall

Group in Buddhist Studies
Professor P. S. Jaini, Chairman
246 Dwinelle Hall

Group in Comparative Biochemistry
Professor J. A. Bassham, Chairman
Laboratory of Chemical Biodynamics

Group in Comparative Pathology
Professor Stewart H. Madin, Chairman
3510 Life Sciences Building

Group in Endocrinology
Professor Howard A. Bern, Chairman
5094 Life Sciences Building

Group in Environmental Health Sciences
Professor R. C. Cooper, Chairman
% School of Public Health
108 Earl Warren Hall

Group in Epidemiology
Professor Warren Winkelstein, Jr., Chairman
% School of Public Health
19 Earl Warren Hall

Group in Folklore
Professor William Bascom, Chairman
103 Kroeber Hall

Group in Food Science
Professor A. I. Morgan, Jr., Chairman
119 Morgan Hall

Group in Genetics
Professor Seymour Fogel, Chairman
345 Mulford Hall

Group in Immunology
Professor Phyllis B. Blair, Chairman
3573 Life Sciences Building

Sponsoring Committee for Latin American Studies
Professor Woodrow W. Borah, Director
% Department of History
3229 Dwinelle Hall

Committee for Law and Society
Center for the Study of Law and Society
Professor J. H. Skolnick, Chairman
Professor L. Nader, Graduate Adviser

Committee on Medieval Studies
Professor Gerard Caspary, Chairman
% Department of History
2411 Dwinelle Hall

Group in Microbiology
Professor H. J. Phaff, Davis, Chairman
Professor Michael Doudoroff, Graduate Adviser
% Department of Bacteriology and Immunology
5559 Life Sciences Building

Group in Nutrition
Professor Richard L. Lyman, Chairman
% Department of Nutritional Sciences
119 Morgan Hall

Group in Parasitology
Professor C. J. Weinmann, Chairman
414 Wellman Hall

Group in Physiological Optics
Professor Meredith W. Morgan, Chairman
109 Minor Hall

Group in Plant Physiology
Professor Louis Jacobson, Chairman
108 Hilgard Hall

Group in Range Management
Professor H. F. Heady, Chairman
% School of Forestry and Conservation
27 Mulford Hall

Group in Romance Languages and Literatures
Professor Jonas A. Barish, Chairman
% Department of French
4125 Dwinelle Hall

Group in Romance Philology
Professor Ruggero Stefanini, Chairman
% Department of Italian
5125 Dwinelle Hall

Committee for Certificate in Russian and East European Studies
Professor Andrew C. Janos, Chairman
210 Barrows Hall

Group in Science/Mathematics Education
Professor Frederick Reif, Chairman
347 Birge Hall

Group in Soil Science
Professor Paul L. Gersper, Chairman
% Department of Soils and Plant Nutrition
108 Hilgard Hall

Group in Wood Science and Technology
Professor Fred E. Dickinson, Chairman
478 Richmond Field Station, Campus
To allow the student an approach to his field that, in its breadth, falls between that of the department and the interdisciplinary group, the Graduate Division has encouraged the informal establishment of *ad hoc* programs leading to the Ph.D. degree. In such programs, the student may prepare a proposal for a course of study under the sponsorship of three faculty members. Final approval of every individual graduate program and admission of each student into such a program must be granted by the Graduate Council. Degree requirements must be completed in accordance with Graduate Council policies and the degree is awarded in a field stipulated by the Council for the individual student when it admitted him. In some cases, e.g., Medieval Studies, a faculty committee is specifically appointed to advise both the student and the interested departments on setting up a program that will best meet both the student’s needs and the departments’ views of the proposed program’s intellectual quality. Advice on procedures for such *ad hoc* programs is available from the Dean and Associate Deans of the Graduate Division.

**Foreign Language Requirement**  The requirement serves (1) to make certain that a Ph.D. candidate has the ability to acquire wide knowledge in his field of study, and (2) to enable him to keep up with foreign developments in the field. Each student must fulfill the foreign language requirement for the Ph.D. before advancement to candidacy and preferably before admission to the Qualifying Examinations (see next page), according to the policies current in his department or group. Each graduate program may have somewhat different foreign language requirements, not only with respect to the particular languages required but also with respect to their number. Some graduate programs include the satisfaction of the foreign language requirement for the doctorate in their requirements for admission to doctoral programs. Prospective students are urged to inquire about the foreign language requirement as soon as possible and, if they can, to fulfill it while still in undergraduate status. Although the Graduate Council has granted variances to the general legislation of the Academic Senate for some programs, the overall requirement of knowledge of foreign languages may, in general, be satisfied by one of the following options in accordance with the Academic Senate Regulation 2001, June, 1971:

1. Demonstration of a reading knowledge of two languages by passing an examination in each, set by the department(s) concerned. The department(s) determine(s) whether a dictionary may be used; the length of the passage and the time allotted are subject to regulation by the Graduate Council. For one of these examinations, the student may, subject to the approval of the department(s) concerned, substitute a five-quarter (or equivalent) sequence of courses in that language, of University grade, passed with an average of C or better. The Graduate Council establishes general policies respecting such sequences, including time limits beyond which they no longer carry credit, and authorizes the Dean, upon recommendation of the department(s) concerned, to accept language courses taken at another institution.

2. Demonstration of an exceptionally thorough reading knowledge and an adequate knowledge of the grammatical structure of a single language. Such command is tested under the direction of the Graduate Council.

In the above options the terms “language” and “languages” refer to any language certified to the Graduate Council by the departments concerned.

Students who by virtue of background have a native speaker’s command of a certified language will be considered to have met the language requirement as specified in
THE DOCTOR'S DEGREE

2, above. Standards for evidence of background will be established by the Graduate Council.

Noncredit courses for graduate students are offered by the various language departments to prepare students for reading examinations.

Notice of Intended Candidacy Notice of his intention to proceed to candidacy for a doctoral degree should be given by the student to his department or group for review and decision by the Graduate Adviser as early as possible in his graduate career, preferably by the end of the second quarter of residence.

Qualifying Examinations Before admission to candidacy a student must pass a series of qualifying examinations administered by a committee appointed by the Graduate Council. He must have removed any deficiencies in his training, including satisfactory resolution of any incomplete grades in courses required by the Graduate Adviser for his individual program, must have maintained at least a B average in all course work undertaken in graduate status, and should have fulfilled the language requirement(s).

Advancement to Candidacy Application is made on a form furnished by the Graduate Division, no later than the quarter following the one in which the qualifying examinations were passed. The completed form, bearing the endorsement of the student's department, is filed with the Dean of the Graduate Division, who determines whether all formal requirements have been met. A fee of $25 must be paid when the application is filed. All requirements for the doctoral degree except the dissertation must have been completed before the student may be advanced to candidacy.

The Candidate's Degree A new degree, "Candidate in Philosophy," which gives formal recognition to a definite stage of progress toward the doctorate, may be awarded to students when they are advanced to candidacy for the Ph.D. degree. The following departments and groups currently offer this degree:

<table>
<thead>
<tr>
<th>Applied Mathematics</th>
<th>English</th>
<th>Nutrition</th>
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</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>French</td>
<td>Oriental Languages</td>
</tr>
<tr>
<td>Astronomy</td>
<td>Genetics</td>
<td>Paleontology</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Geography</td>
<td>Plant Pathology</td>
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<tr>
<td>Biochemistry</td>
<td>German</td>
<td>Plant Physiology</td>
</tr>
<tr>
<td>Botany</td>
<td>History</td>
<td>Rhetoric</td>
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<tr>
<td>City and Regional Planning</td>
<td>Immunology</td>
<td>Romance Languages and Literatures</td>
</tr>
<tr>
<td>Comparative Literature</td>
<td>Librarianship</td>
<td>Romance Philology</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Linguistics</td>
<td>Slavic Languages and Literatures</td>
</tr>
<tr>
<td>Economics</td>
<td>Logic and the Methodology of Science</td>
<td>Statistics</td>
</tr>
<tr>
<td>Education</td>
<td>Mathematics</td>
<td>Zoology</td>
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<tr>
<td>Electrical Engineering</td>
<td>Near Eastern Studies</td>
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<td>Endocrinology</td>
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Doctoral Dissertation The format of the doctoral dissertation is similar to that outlined in the last section for the master's thesis. Further information is available from the Dean of the Graduate Division.

The dissertation, the product of independent investigation under faculty supervision, must be submitted to the committee in charge (see next page), and must receive both its approval and the approval of the Graduate Council. The dissertation is the most important requirement for the doctoral program; the
degree is in no case granted for completion of course work only, no matter how extensive.

The candidate is to work under one of two plans, as adopted by his department or group:

Under Plan A, the Administrative Committee of the Graduate Council appoints a five-man committee which determines whether the candidate has met the requirements for the degree. Three members of the committee, one of whom must be from a department other than that of the student's major subject, guide the candidate in his research and pass judgment on the merits of his dissertation. The whole committee conducts a final oral examination dealing primarily with the relationship between the dissertation and the general field of study in which the subject of the dissertation lies. Admission to the final examinations may be restricted to the members of the committee, members of the Academic Senate, and guests of equivalent rank from other institutions.

Under Plan B, the Administrative Committee of the Graduate Council appoints a committee of three members, one of whom must be from a department other than that of the student's major subject, to guide the candidate in his research and judge the merits of his dissertation. This committee may require any necessary conferences for elucidation of the subject treated in the dissertation. After presentation of the dissertation, but before final action is taken upon it, the committee may, if deemed necessary, require the candidate to defend the dissertation in a formal oral examination.

After the dissertation has been approved by the candidate's committee, two copies (one an original) are filed with the Dean of the Graduate Division on a date specified by that office. Along with the dissertation, an abstract of it in triplicate not to exceed 600 words, with one copy signed by the dissertation chairman, is also filed with the Graduate Division.

All of the procedures and regulations described above, and in the preceding section on master's degrees, constitute the minimum requirements for the higher degrees, as set by the Graduate Division. Each academic department may adopt additional requirements, as approved by the Dean of the Graduate Division and the Graduate Council, according to the demands of a candidate's field of study. Programs using Plan A and Plan B are listed below.

### PLAN A

<table>
<thead>
<tr>
<th>Anatomy</th>
<th>Logic and the Methodology of Science</th>
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<tbody>
<tr>
<td>Architecture</td>
<td>Music</td>
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<td>Asian Studies</td>
<td>Near Eastern Studies</td>
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<tr>
<td>Buddhist Studies</td>
<td>Oriental Languages</td>
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<td>Comparative Literature</td>
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<td>Environmental Health Sciences</td>
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<tr>
<td>Italian</td>
<td>Romance Languages and Literatures</td>
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<td>Emphases: French, Italian, Spanish</td>
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</tbody>
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### PLAN B

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<tr>
<th>Agricultural Chemistry</th>
<th>Biochemistry</th>
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<tbody>
<tr>
<td>Agricultural Economics</td>
<td>Biophysics</td>
</tr>
<tr>
<td>Ancient History and Archaeology</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>Anthropology</td>
<td>Botany</td>
</tr>
<tr>
<td>Applied Mathematics</td>
<td>Business Administration</td>
</tr>
<tr>
<td>Astronomy</td>
<td>Chemical Engineering</td>
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<tr>
<td>Bacteriology</td>
<td>Chemistry</td>
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<td>City and Regional Planning</td>
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<tr>
<th>Romance Philology</th>
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<tr>
<td>Scandinavian Languages</td>
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<tr>
<td>and Literatures</td>
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<tr>
<td>Slavic Languages and Literatures</td>
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<tr>
<th>Classical Archaeology</th>
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<tbody>
<tr>
<td>Classics</td>
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<tr>
<td>Emphases: Greek, Latin</td>
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<tr>
<td>Comparative Biochemistry</td>
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<tr>
<td>Comparative Pathology</td>
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<tr>
<td>Computer Science</td>
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<tr>
<td>Demography</td>
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<tr>
<td>Dramatic Art</td>
</tr>
</tbody>
</table>
THE DOCTOR'S DEGREE; FACILITIES AND SERVICES / 43

Facilities and Services

Foreign Language Training  When space is available, University graduate students and faculty may facilitate their research and overseas field work by enrolling in courses for oral proficiency training in any of the languages taught at the Defense Language Institute of the Presidio of Monterey. Application forms may be obtained from the Secretary, University of California Language Training Advisory Committee, University of California, Santa Cruz, California 95060.

Stanford-California Exchange Program  Graduate students with superior academic records may participate in the Stanford-California Exchange program when it is deemed desirable for them to take a limited amount of work in courses offered at Stanford and not available at Berkeley. Participants in this program register and pay the applicable fees at Berkeley and are exempt from tuition and fees at Stanford. The same privilege is accorded to Stanford students who wish to take courses at Berkeley. Further information and application forms may be obtained from the Petitions Desk, Graduate Division, Room 1, California Hall.

Graduate Theological Union  The Graduate Theological Union in Berkeley offers graduate programs in religion that consist of Union courses as well as courses offered in the Graduate Division at Berkeley. Examinations, the dissertation, and the general scope of the program are under the direction of faculty members representing both the University and the Graduate Theological Union. All applicants to this program must follow the normal Graduate Division admissions procedure, observing the Graduate Division and departmental deadline dates, supplying required documentation, and having their applications go through the customary reviews. Initial information about the program, a catalogue, and application forms should be obtained through the office of the Graduate Theological Union, 2465 LeConte Avenue, Berkeley, California 94709.

Joint Doctoral Programs  Immunology—An intercampus joint degree program has been established between the Berkeley and San Francisco campuses of the University of California leading to the Ph.D. degree in Immunology. This pro-
The Graduate Division does not replace the existing independent program on the Berkeley campus but is in addition to it, and is arranged to allow students to pursue study, on either campus, representing varied interests in immunology. Admission to the program is obtained by application to the home campus participating in the joint program. The home campus is that on which the student expects to do research for the dissertation. Near Eastern Religions—a program leading to the Ph.D. degree has been established which will be conducted jointly by the Berkeley campus and the Graduate Theological Union. Applicants should make application both to the Graduate Admission/Fellowship Office on the Berkeley campus and to the Graduate Theological Union.

**Study Abroad for Graduate Students**

Graduate students who have been admitted for study toward a higher degree may, under certain conditions, be granted permission to study abroad. Such study may consist of independent thesis study or participation in University-sponsored programs abroad. Most University of California Education Abroad Study centers require that an applicant must have completed at least one year in residence before departure for study abroad, and must demonstrate language proficiency, where required.

Graduate students are eligible to apply to all of the study centers under the Education Abroad Program. A student who desires unit credit toward a graduate program for work taken abroad must, after return to Berkeley, obtain the approval of both his department and the Dean of the Graduate Division.

Intensive language study is offered in Arabic at Cairo, in Japanese at Tokyo, and in Mandarin Chinese at Taipei. Language preparation applicable to a teaching credential is offered in Paris and Mexico City. A summer program in Ghana at the Institute of International Studies is also open to graduate students.

**Internship/Study Opportunities in Professional Schools Program in India**

The Professional Schools at Berkeley conduct a program in New Delhi. Students earn credit for seminar study and for internship work in local government agencies appropriate to their professional interest.

For additional information and applications for all the above programs, write to: Office of International Education, 2538 Channing Way, Building D, Room 104A, University of California, Berkeley, California 94720.

For other programs abroad for graduate students, see "Services and Facilities" section of this catalogue.

**Financial Aid and Employment Opportunities for Graduate Students**

Fellowships and graduate scholarships are offered on the Berkeley campus. Some are restricted to beginning graduate students, others to advanced graduate students; some are restricted to specific fields of study, others are open to all students by competition. Provision is made also for a number of traveling fellowships.

Some funds for these awards are made available from endowments held in trust by the University and given by interested friends and alumni; others are made available from annual donations from educational foundations, industry, government, and individual benefactors.
Information  Information on awards available each year is issued early in the fall. Requests for information should be addressed to the Graduate Admission/Fellowship Office, Room 1, California Hall, University of California, Berkeley, California 94720.

Application Procedure  The fellowship application deadline for the 1974–75 competition is December 1, 1973. Since the date is subject to change, a student should write for information in the late summer or early fall of the year preceding his proposed enrollment at Berkeley.

Students who will be enrolling as new graduate students in a fall quarter may apply for admission and for consideration for a fellowship or graduate scholarship by completing a combined application for Admission and Fellowship and filing it by the deadline set for receipt of fellowship applications.

Newly entering foreign students, however, fill out a separate application for admission, not the combined form. Since the number of fellowship and graduate scholarship awards available to them is extremely limited, the following procedure has been adopted: as the applications for admission of new foreign graduate applicants are reviewed, departments may recommend to the Fellowship Committee that individuals of high academic distinction be considered for awards. This will be done entirely by departmental recommendation, not by the applicant’s special request. Those who do receive fellowship awards will be notified by the Graduate Admission/Fellowship Office on or about April 1. Foreign students not receiving these awards will simply be notified of their admission or denial of admission when action has been taken on their applications, without reference to the April 1 date. They should not assume that admission carries any assurance of financial support or remission of fees.

Continuing or returning graduate students at Berkeley in a fall quarter may obtain necessary fellowship application material from departmental or Graduate Group offices or from the Graduate Admission/Fellowship Office, Room 1, California Hall. These applications and supporting materials must be filed with the department or Graduate Group by the date established for new student applications for the year in question.

Applications for all the fellowship and graduate scholarship award programs mentioned here and on the following page are considered only once a year, and are for the academic year beginning with the fall quarter and extending through the winter and spring quarters. None of the awards is made in mid-year.

Announcement of Awards  Awards are announced on or about April 1, and must be accepted or refused, in writing, by April 15. The acceptance of a fellowship or graduate scholarship carries with it the presumption that the incumbent will devote full time to graduate study and research at the University of California. Institutions which are members of the Association of Graduate Schools in the Association of American Universities require that anyone who resigns an accepted appointment after April 15 must, in order to become eligible to fill a vacancy in a member institution, receive consent to do so from the university that first appointed him.

*Applications are not sent by airmail unless the applicant forwards in advance sufficient postage for 3½ ounces of airmail postage. International postal coupons may be used for this purpose.
Criteria of Appointment  The purpose of graduate appointments is to provide able and productive scholars for the future. Awards are thus made as a mark of honor, primarily on the bases of outstanding scholastic achievement and promise. The applicant's academic record, evidence of his ability in research or of some other creative accomplishment, his intellectual capacity, and his general promise, are all strongly considered. Normally the award is for one academic year.

Supplementation of a fellowship by employment or any other means is possible only by the express consent of the Dean of the Graduate Division, and the amount of supplementation is strictly limited. Persons supplementing fellowships without such approval may face loss of the fellowship and a requirement to repay the fellowship funds disbursed to them.

Honorary Traveling Fellowships  Honorary traveling fellowships may be awarded to distinguished graduate students in any department. Such awards do not carry any stipend, but entitle the holder to official credentials from the University which may be of assistance in pursuit of studies and special inquiries in other states and foreign lands. Applications for honorary traveling fellowships must be received by the same date as for other fellowships, December 1.

National Defense Education Act Fellowships  A number of National Defense Foreign Language Graduate Fellowships may be available under Title VI of the National Defense Education Act in certain designated modern foreign languages. Students who apply through the regular University fellowship competition will be considered for these awards without making further application.

Waiver of the Nonresident Tuition Fee  A very limited number of waivers of the nonresident tuition fee is available each academic year. These are awarded to graduate students with distinguished academic records or to teaching assistants, by departmental recommendation, until departmental waiver quotas are filled. Applicants must be enrolled full-time in a program of study leading to a higher degree and cannot be the recipients of a fellowship, scholarship, grant-in-aid, or other award from a foreign government, or from any other source that would make them ineligible for the waiver privilege. Applications can be obtained from the Graduate Admission/Fellowship Office and must be returned to that office on or before May 15. Awards are usually made in late summer, and applicants are then notified of the action on their requests. There is no waiver privilege for summer session registrants since the nonresident tuition fee is not assessed during the summer. For information regarding the establishment of legal residence in the state of California, see page 15 of this catalogue under the heading “Nonresident Tuition Fee.”

Graduate Minority Program  Selection criteria for the Graduate Minority Program are the same as for other fellowships, except that competition is restricted to United States citizens from a few minority groups, primarily Blacks, Chicanos, and Native Americans. Applications are due in the Graduate Division by December 1. For further information write to the Graduate Minority Program, Graduate Division, 1 California Hall, University of California, Berkeley, California 94720.

Teaching and Research Positions  Salary figures for all positions mentioned in the following sections are subject to United States income tax deductions. Fig-
ures given are gross, not net, and do not reflect deductions. Information about salary payment schedules should be obtained when an appointment is offered, since payment for work performed is later than dates when registration fees are due. Appointments carry no guarantee of waiver of the non-resident tuition fee or any other fees. Appointments are for a period of from one to three academic quarters. Reappointment may be recommended. Employment in the summer sessions may be additional and, in some titles, may be full-time. For teaching assistants and teaching fellows, payment is in nine equal installments (three installments per quarter). Registered graduate students may not be employed by the University in any capacity at more than half-time without the express consent of the Dean of the Graduate Division. Registered graduate students employed half-time by the University are nevertheless considered full-time students if they are taking a full academic load; i.e., registered for at least six units of upper division and/or graduate work.

Teaching Assistantships  Many departments make teaching assistantships available to outstanding graduate students, providing them a salary of $421 per month. Appointments are for half-time service. The teaching assistant must be a registered full-time student. Chosen for scholarly achievement and promise as a teacher, he serves his apprenticeship under active supervision of the regular faculty. In some departments, students working for the Ph.D. degree are required to complete a specified minimum period of teaching as a part of their degree program. Application is made directly to the chairman of the department in which the student wishes to teach.

Research Assistantships  Qualified registered full-time graduate students may seek positions as research assistants in the departments, centers, and institutes of the University. The stipend is $335 per month for a half-time appointment. The duration and extent of such employment is variable. Application is made directly to the department, center, or institute.

Teaching Fellowships  An appointee must be a registered full-time student who has been advanced to candidacy for the doctorate, or who has otherwise achieved appropriate professional maturity. He is chosen for competence to conduct the entire instruction of a group of students in a lower division course, under general supervision of a regular faculty member. The stipend is $503 per month for a half-time annual appointment. Application is made to the individual departmental chairman.

Associateships  The title "Associate" is assigned to teachers employed temporarily and not under consideration for appointment as Instructor or Professor. Services may be either full- or part-time. Associates are employed to give independent instruction in lower division courses. They may or may not be registered graduate students or candidates for degrees at this University. They must possess a master's degree or equivalent training and have had at least one year of teaching experience (including that of a teaching fellowship or assistantship) in or outside of the University. Registered students, who are limited to half-time service, are in a monthly salary range of from $324.50 to $406.50. Application is made to the individual departmental chairman.
GRADUATE DEGREES OFFERED ON THE BERKELEY CAMPUS

Academic degrees are the M.A., M.S., M.F.A., and Ph.D. All others are professional degrees. The J.D. in Law is the basic law degree (formerly the LL.B.). It is a graduate degree and application must be made both to the graduate Division and to the School of Law.

Applicants should specify both general field and emphasis, if any.

† Agricultural Chemistry, Ph.D.
Agricultural Economics, M.S., Ph.D.
Anatomy, M.A., Ph.D.
† Ancient History and Archaeology, M.A., Ph.D.
Anthropology, M.A., Ph.D.
Applied Mathematics, Ph.D.
Architecture, M.Arch., Ph.D.
Art, M.A., M.F.A.
† Asian Studies, M.A., Ph.D.
M.A. program emphases:
   East Asian, Southeast Asian, South Asian
Astronomy, M.A., Ph.D.

Bacteriology, M.A., Ph.D.
Biochemistry, M.A., Ph.D.
† Biophysics, Ph.D.
† Bioradiology, M. Biorad.
† Biostatistics, M.A., Ph.D.
Botany, M.A., Ph.D.
† Buddhist Studies, Ph.D.
Business Administration, M.B.A., M.S., Ph.D.

Chemical Engineering, M.S., Ph.D.
Chemistry, M.S., Ph.D.
City and Regional Planning, M.C.P., Ph.D.
Classical Archaeology, M.A., Ph.D.
Classics, M.A., Ph.D.
Ph.D. program emphases:
   Greek, Latin
† Comparative Biochemistry, M.A., Ph.D.
Comparative Literature, M.A., Ph.D.
† Comparative Pathology, M.S., Ph.D.
Computer Science, M.A., Ph.D.
Criminology, M.Crim., D.Crim.

Demography, M.A., Ph.D.
Design, M.A.
Dramatic Art, M.A., Ph.D.

Economics, M.A., Ph.D.
Education, M.A., M.A.T., Ph.D., Ed.D.
† Endocrinology, M.A., Ph.D.
Engineering Science, M.S., Ph.D.

Emphases for Engineering and Engineering Science
Civil Engineering
Electrical Engineering and Computer Sciences
Industrial Engineering and Operations Research
Materials Science and Engineering
Mechanical Engineering
Naval Architecture
Nuclear Engineering
English, M.A., Ph.D.
Entomology, M.S., Ph.D.
† Environmental Health Sciences, M.S., Ph.D.
Environmental Planning, Ph.D.
† Epidemiology, M.S., Ph.D.
† Folklore, M.A.
† Food Science, M.S.
Forestry, M.F.
French, M.A., Ph.D.

† Genetics, M.S., Ph.D.
Geography, M.A., Ph.D.
Geology, M.A., Ph.D.
Geophysics, M.A., Ph.D.
German, M.A., Ph.D.
Greek, M.A.

History, M.A., Ph.D.
History of Art, M.A., Ph.D.
† Immunology, M.A., Ph.D.
Italian, M.A., Ph.D.

Journalism, M.J.
Landscape Architecture, M.L.A.
Latin, M.A.
† Latin-American Studies, Ph.D.
Law, J.D., LL.M., J.S.D.
† Law and Society, M.A.
Librarianship, M.L.S., Ph.D., D.L.S.
Linguistics, M.A., Ph.D.
† Logic and the Methodology of Science, Ph.D.

Mathematics, M.A., Ph.D.
† Medical Physics, Ph.D.
† Microbiology, M.A., Ph.D.
Molecular Biology, M.A., Ph.D.
Music, M.A., Ph.D.

Near Eastern Studies, M.A., Ph.D.

† Nutrition, M.S., Ph.D.
Oriental Languages, M.A., Ph.D.
Paleontology, M.A., Ph.D.
† Parasitology, M.S., Ph.D.
Philosophy, M.A., Ph.D.
Physical Education, M.A.
Physics, M.A., Ph.D.
† Physiological Optics, M.S., Ph.D.

Physiology, M.A., Ph.D.
Plant Pathology, M.S., Ph.D.
† Plant Physiology, M.S., Ph.D.
Political Science, M.A., Ph.D.
Psychology, M.A., Ph.D.
† Public Policy, M.P.P., Ph.D.
Public Health, M.P.H., Dr.P.H.
† Range Management, M.S.
Rhetoric, M.A., Ph.D.
† Romance Languages and Literatures, Ph.D.

Emphases:
   French, Italian, Spanish
† Romance Philology, Ph.D.

Scandinavian Languages and Literatures, M.A., Ph.D.
† Science/Mathematics Education, Ph.D.

Slavic Languages and Literatures, M.A., Ph.D.
Social Welfare, M.S.W., D.S.W.
Sociology, M.A., Ph.D.
† Soil Science, M.S., Ph.D.
South and Southeast Asian Languages and Literatures, M.A., Ph.D.
M.A. program emphases:
   Sanskrit; Modern Indo-Aryan: Hindi and Urdu;
   South Asian Civilization
   Ph.D. program emphases:
   Sanskrit; Modern Indo-Aryan: Hindi and Urdu;
Spanish, M.A.

Statistics, M.A., Ph.D.

Wildland Resource Science
M.S., Ph.D.
† Wood Science and Technology, M.S., Ph.D.

Zoology, M.A., Ph.D.

† Indicates established interdisciplinary group or field.
* Students are not admitted to work for the M.A. degree, although it may be awarded to students pursuing work toward the Ph.D. degree after fulfillment of the appropriate requirements.
Certificate in Russian and East European Studies  Students who have had substantial training in the Russian and East European Area in at least two departments and have had 16 quarter units (or equivalent knowledge) of an East European language can, by taking a required number of additional courses in the area, obtain a Certificate in Russian and East European Studies. The certificate course requirements can be fulfilled either as part of a program leading to a higher degree in the social sciences or humanities or after receipt of such a degree.

Certificates of Completion of Graduate Curricula in the School of Librarianship  Three certificate programs have been established which are designed to meet the need for advanced studies beyond the first professional degree (M.L.S.) and short of the doctoral degrees (Ph.D., D.L.S.). The programs will be in the following fields: Bibliography; Library Automation and Information Science; and Library Management. Inquiries should be directed to the School of Librarianship.

Interdisciplinary Groups  See information on page 38.

Master of Arts in Teaching  The degree of Master of Arts in Teaching is offered by the School of Education jointly with the Departments of Comparative Literature, English, and German. At the present time, it is limited to the three academic fields of study named above. Candidates must satisfy all requirements to be certified to teach in the State of California in addition to completing academic training in one of the three subject fields. Inquiries should be directed to the appropriate academic department and to the School of Education.

Medieval Studies  Medieval Studies at Berkeley are currently undertaken in a joint-degree program designed to preserve the established standards of training in a major subject, while broadening the student's experience in other aspects of the field. The degree granted in recognition of this extra achievement is the Ph.D. with a joint designation, for example "Ph.D. in English and Medieval Studies." Each student is expected to fulfill the Ph.D. requirements of his major department, which administers the program of study. In addition, each student pursues seminar work in two outside departments, one of which is History (unless that is the department of the major). The program includes a special examination in Latin, consisting of representative passages from medieval authors. Interested students should apply to the individual department in which they would do their major work.

Tropical Biogeography  Registered graduate students interested in doing field research in the tropics may be assisted by the Associates in Tropical Biogeography who among other objectives have that of serving as an advisory committee to the Dean of the Graduate Division.

Teaching Credentials  Work leading to the Standard Teaching Credential is given on the Berkeley campus. For details, please consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION.
The Berkeley campus has a vast range of facilities and services for your use. This section of the catalogue offers a general outline of campus services, student organizations and activities, fees and expenses, financial aids, and housing. You may obtain more extensive information by writing directly to the appropriate office for the information desired. Instructions for obtaining information are also included with admissions materials you receive prior to your arrival on the Berkeley campus.

Services to Students

**Student Health Service** Located in Cowell Memorial Hospital in the eastern area of the campus, the Student Health Service is financed by a portion of your registration fee. This service is offered to conserve your time for classwork and studies by preventing and treating acute illnesses.

When you pay the full registration fee, you are eligible for health service from the first day of the quarter in which you register to the last day of the quarter, or to the date of official withdrawal if you withdraw prior to the end of a quarter or semester. You may receive limited hospitalization for acute medical problems. The non-registered student may be eligible for care at the Health Service during the summer months on a fee-for-service basis, provided he/she has been a fully registered student the previous quarter.

With certain exceptions, the Health Service does not provide continuing treatment or surgery for chronic physical defects or illnesses present at the time of entrance to the University; for injury or illness under treatment elsewhere; or for conditions where medical or surgical treatment is not immediately necessary and may be postponed to avoid interruption of classwork. A charge is made for all dental services.

Students injured in the course of employment may be treated by the staff at Cowell Hospital or by a physician recommended under the terms of the employer’s workmen’s compensation insurance. The Student Health Service program does not cover the expenses resulting from injury in the course of employment or when it is the result of liability or negligence on the part of someone else.

Treatment at the Health Service for injuries sustained in which someone other than the student is determined to be responsible is not a Health Service benefit under the registration fees. Students obtaining such care will be required to assign financial remuneration for medical expenses to Cowell Hospital to cover the cost of care received at the Health Service.

**Optometry Clinic** Complete emergency and routine vision services are provided in the Optometry Clinic of the School of Optometry for students, faculty, University employees, and the general public to the extent possible. These services are a part of the teaching program in the School of Optometry and are not included as a part of the Health Service.
Counseling Center  As a regularly enrolled student, you may make use of the services of a professionally qualified staff member to talk at length about your scholastic performance, choice of vocation, or personal adjustment. You may request help in improving study skills, assessing interests and aptitudes, deciding on a major, or exploring long-range career opportunities. You may, if you wish, discuss personal problems. Marital and group counseling are also available. Psychological and aptitude testing are provided as part of the counseling process, as well as the use of an extensive library of reference materials on occupations, professions, and career opportunities. All communications between students and counselors are treated confidentially.

If you wish to improve your basic educational skills, you may use the Reading and Study Skills Service, which offers diagnosis and correction of study problems, including reading, writing, spelling, and vocabulary difficulties. The Service maintains a modern, electronically equipped reading laboratory supervised by a professionally trained staff.

The Center offers legal counseling, and special testing when required for admission to graduate or undergraduate programs. It also maintains directories and catalogues of colleges, professional and technical schools, as well as lists of scholarships, fellowships, and loans. You may use these reference materials even if not seeking counseling service.

Further inquiry or appointments may be made at the Counseling Center, Temporary Building 5, just north of the Campanile Esplanade.

Office of Student Relations and Programs  Located in 201 and 207 Sproul Hall, this office is one of the many administrative offices of the University serving students, and it does so in a variety of ways. Formerly known as the “Dean of Students Office,” it provides assistance to students in almost every phase of their University experience.

A primary function of OSRAP is to provide answers and to help solve those day-to-day problems faced by the typical student. This comes under the heading of general counseling provided by the staff. Students in a pre-professional status, such as the pre-medical, pre-legal, pre-dental, and pre-nursing career fields, find OSRAP equipped to give comprehensive counseling in these areas, as well as assistance in obtaining the all important letters of recommendation to the schools of their choice.

Students wishing to enter a professional school on the Berkeley campus should consult the Announcement of the appropriate school. Students hoping to enter a number of professional schools not located on the Berkeley campus are encouraged to consult an adviser in OSRAP. For the fields for which OSRAP provides pre-professional advising there is no required academic major. Students hoping to enter one of these fields take the courses required by the professional schools in addition to satisfying the requirements of the college or school in which they are enrolled at Berkeley.

The various deans in these fields assist and advise the several undergraduate pre-professional organizations, such as the Pre-Med, Pre-Legal, and Pre-Dental Societies in arranging programs and speakers.

The office maintains a Recommendation and Activities File for students who desire this information released to Graduate and Professional schools, or to
prospective employers. Faculty and staff may send letters of recommendation there for inclusion in file to be used at a later date.

The Selective Service problems of students are also handled by OSRAP, particularly those requiring verification for a student deferment requested by a student. Documentation is furnished in support of appeals regarding reclassification, reinstatement, and related problems with Selective Service Boards. Advice concerning a student’s rights and responsibilities under the law is provided.

Another vital function of OSRAP is to assist students in the development of a variety of programs of interest and importance to the University community. The Summer Orientations Program for new students is just one example. Started as the Cal Prep Program by the ASUC through the Orientations Board, staff assistance and coordination with the various schools and colleges is provided by OSRAP for the numerous and dedicated student staff of the Orientations Program.

The brightly colored information tent by Sather Gate during the pre-enrollment period and the first few weeks of the quarter is an outgrowth of this program. The Health Information Program at Haste Street House developed by concerned students, also has considerable staff assistance from this office, as does the Campus Women’s Forum composed of graduate and undergraduate students.

Weekly “Rap Sessions” have been initiated to allow for open discussion and communication. Advice and coordination are provided many of the traditional student groups, including fraternities and sororities, various honor organizations, and other student groups sponsored by this office.

**Physically Disabled Students Program** Located at 2532 Durant, #2, Berkeley, telephone: 642-0518, this Office offers services to students with diverse disabilities, e.g., blind, quadraplegics, cerebral palsied, etc., either permanent or temporary. These services include assistance in locating housing, in pre-enrollment, orientation to campus and community, supplying keys to elevators and to study rooms, locating readers and tutorial help, and in hiring and training attendants.

**Fraternities and Sororities** Membership in a fraternity or sorority is by invitation after a period of “rushing.” If you are interested, apply through the Interfraternity Council for men, or the College Panhellenic Association for women, both located in the Office of Student Relations and Programs, 201 Sproul Hall. This office will supply general information regarding program and costs.

**Student and Alumni Placement Center (A service for UCB students and alumni)** If you seek part-time, temporary, odd-job or vacation employment, apply to the Student Division, first floor of Temporary Building 6. You should arrange your class schedule before applying. To be served, you must identify yourself by a current registration card or a letter of admission to the University. The Center’s staff provides assistance in finding jobs to meet financial obligations and helps students determine those areas of work for which they are qualified. The University advises that you avoid part-time employment in your first quarter at Berkeley. Employment cannot be arranged by correspondence.

School-year and vacation jobs for students cover a wide range, skilled and
unskilled. These include services, technical, clerical, sales, domestic, manual, and many other kinds of employment. Some employers offer room and board in lieu of salaries. Work Study Program job opportunities, designed for needy students, include a variety of opportunities, both off and on campus. Before applying to the Placement Center for these Work-Study Program opportunities, certification of financial eligibility must be obtained from the Office of Financial Aid, 2539 Channing Way.

The Career Division of the Placement Center maintains services, on the second floor of T-6, in career planning and placement for University of California degree candidates and alumni. Seniors and graduate students should register with the Career Division no later than their final year of study. Annually, the Center arranges on-campus interviews with employer representatives who visit the campus each fall and spring. A variety of other types of career employment information and assistance is available to prospective graduates and alumni, year around.

The Center supports and subscribes to all equal opportunity employment practices, both State and Federal.

Office of Educational Career Services Located at North Gate Hall, Berkeley, California 94720, this is the placement center for teaching, administrative, supervisory, and education related research positions—in universities, colleges, community colleges, high schools, and elementary schools, in this country and abroad. The Office serves all qualified graduates and eligible prospective graduates of the University of California. The Office registers candidates and assembles information into personal files concerning background, training, and professional experience, in order to match candidates with available positions. Placement advisers counsel candidates, communicate with employers, arrange interviews, and recommend qualified candidates to employers. The University reserves the right to recommend only those persons who are considered to be fully qualified.

Living Accommodations There is a wide selection of housing at the Berkeley campus. Admission to this campus does not guarantee housing reservations. You should acquaint yourself, well in advance of your enrollment, with the various living arrangements. Undergraduates check the appropriate section on the Application for Admission to receive descriptive material; graduates return the request card in the Admissions Packet to receive descriptive material. Housing Office also maintains rental listings, but you must visit the office after you arrive on campus to make use of files, which change daily.

More than 3,000 men and women live in University residence halls. An equal number live in fraternities, sororities, cooperatives, and boarding houses. There are apartments for 1,022 in University Married Student Housing. The remaining students live in rooms and apartments in the community. Students consider their individual wishes and needs and select their own accommodations.

Financial Aid The Office of Financial Aid is located at 2539 Channing Way. By visiting or writing that office you may obtain information about the various types of student aid offered. Undergraduate students may apply to the Financial Aid Office for undergraduate scholarships (including Regents and Alumni Scholarships with or without stipend) and Educational Opportunity Grants. Both
undergraduate and graduate students may apply for University Grants-in-Aid, (EOP grants for undergraduate EOP students), National Direct Student Loans, University Loans, Federally Insured Student Loans, Educational Fee Deferment Loans, the College Work-Study Program, and other aid programs. Prizes are also offered.

All of the foregoing forms of financial aid except scholarships and prizes are granted on the basis of financial need only. Prizes are awarded on the basis of competition or outstanding ability in some area of creative or scholarly achievement. Undergraduate scholarship awards are made on the basis of scholarship and financial need, except Regents and Alumni Honorary Scholarships which are awarded in recognition of outstanding achievement and promise. Complete information concerning all of these programs except prizes is contained in the publication “Financial Aid Information” which may be obtained from the Office of Financial Aid. A separate booklet describing the various prizes offered is also supplied on request.

Application forms for these financial aids are available about October 1 for the following year, and must be filed by January 15, except those for prizes, University loans, and one or two other minor programs. Information about application deadline dates for these latter is contained in the “Financial Aid Information” or “Prizes” booklets.

Information about fellowships and graduate scholarships may be obtained separately from the Graduate Division, 1 California Hall.

California State Scholarships are awarded by the State and are open for application to undergraduates and, in some years, to graduates. They range in value from $300 to $600 and apply toward the registration and educational fees. Students may obtain application forms and further information from the California State Scholarship and Loan Commission, 714 P Street, Sacramento, California 95814, beginning about October 1 for the following year. The filing date is in mid-November.

Social Security Benefits If you have questions regarding Social Security benefits, inquire at the Office of Financial Aid, 2539 Channing Way.

Aid to Veterans If you have questions concerning educational benefits under federal (including new legislation) or California state programs, inquire at the Office of Financial Aid, 2539 Channing Way.

Aid to Veterans and Dependents of Veterans If you are a veteran, you may secure application forms (VA Form 21E-1990) from the Veterans office at colleges and universities, from local representatives of veterans organizations, from the Red Cross, or from Veterans Administration offices. The application should be accompanied by a copy of your DD-214 (Report of Separation from the Armed Services) and, if applicable, all the documents necessary to support evidence of dependency. To expedite payment of benefits students should come to the Financial Aid Office with their study list as soon as possible after registration. If you have questions, inquire at the Office of Financial Aid.

Reserve Officers Training Corps The University of California, as a land-grant institution established by the Morrill Act of 1862, offers courses and programs in military training. This training is voluntary, and affords a young man the
opportunity to qualify for a commission as an officer in the Army, Marine Corps, Navy, or Air Force while completing his college education. Reserve Officer Training Corps (ROTC) courses are offered by three departments: Aerospace Studies (Air Force), Military Science (Army), and Naval Science (Navy and Marine Corps). The departments furnish all necessary textbooks, uniforms, and supplies, and arrange draft deferment. The programs carry a monthly stipend in the junior and senior years, and additional financial aids are available to qualified students. Individual programs are summarized briefly as follows:

Air Force  

Four-Year Program—Open to qualified male and female freshmen. During the freshman and sophomore years students attend AFROTC classes as described on page 88. After the sophomore year students may compete for the Commissioning Program and if selected attend four weeks of field training at an Air Force base, and participate in AFROTC during their junior and senior years. Upon graduation and successful completion of AFROTC the student qualifies for a commission as a Second Lieutenant in the Air Force Reserve and is usually assigned to active duty in an officer specialty that will be related to his academic preparation. Officers will have the opportunity to compete for a commission in the Regular Air Force or Career Reserve Status in the Reserve while serving on active duty. For nonflying personnel the active duty commitment is four years, and for flying personnel it is five years after completing Air Force flying training. Four- and three-year scholarships are available to well-qualified cadets in the four-year program. These cover full tuition, laboratory expenses, registration fees, and an allowance for books, and $100 per month in non-taxable pay.

Two-Year Program—A two-year program is offered to undergraduate or graduate students. Selected applicants complete six weeks of field training during the summer preceding the Commissioning Program. Two academic years are required to complete the program as described on page 88. The commissioning and active duty procedures are as described above. Cadets are paid $100 per month during the two academic years. A limited number of two-year scholarships are available on a competitive basis.

Flying Training—Male applicants who are interested in flying training are particularly encouraged to apply. Those qualified receive free flight training during their last year in AFROTC and may qualify for an FAA private pilot's license. For additional information on any phase of the AFROTC program, please consult the Department of Aerospace Studies, 10 Callaghan Hall, 642-3572.

Army  

Three programs:

1. Four-Year Program  
Open to male freshmen and to other male undergraduates who will be in academic residence for a time sufficient to complete the program. During the last two years of the program, students receive a $100 monthly tax-free stipend; admission to this phase of the program is competitive. The student completes a six-week summer camp between the third and fourth year; summer camp pay is approximately $300.00 per month plus travel expenses and room and board. Upon graduation he accepts, if offered, a commission in the Army Reserve; outstanding students are eligible for a commission in the Regular Army. Active duty obligation for Reserve officers is two years. Entry on active duty may be delayed for graduate study and participating students may receive draft deferments.

2. Two-Year Program  
Substitutes an additional six-week summer camp, between the sophomore and junior years, for the first two years of military science classes. Open only to students with upper division or graduate standing and intended principally, but not exclusively, for highly qualified transfer students. Admission is competitive. Other aspects of this program are identical to those of the four-year program. Interested students should apply at the Department of Military Science early in the winter quarter of their sophomore year.
3. Scholarship Program

a. Four-Year  Awarded annually, by nationwide competition among high school seniors, to outstanding prospective college students. Those selected receive $100 monthly tax-free stipend, payment of tuition (if any) and incidental and laboratory fees, and reimbursement for textbook purchases. Upon graduation, the student accepts, if offered, a commission in the Army Reserve; outstanding students are commissioned in the Regular Army. Active duty obligation is four years. Interested prospective University students should consult their high school guidance counselor for details.

b. Three-Year  Awarded annually to outstanding cadets who are completing their first year of the four-year program described above. Benefits and service obligations are identical to those described above for the four-year scholarships.

c. Two-Year  Awarded annually to outstanding cadets who are completing their second year of the four-year program described above. Benefits and service obligations are identical to those described above for four-year scholarships.

d. One-Year  Awarded annually to outstanding cadets who are completing their third year of the two- or four-year program. Benefits and service obligations are identical to those described for four-year scholarships.

For additional information on any of the programs and their benefits please consult the Department of Military Science, 1 Harmon Gymnasium.

Navy and Marine Corps  Three programs:

1. Naval ROTC Nonscholarship Program  Open by application to physically qualified male students between the ages of 17–21, who are U. S. citizens. The student receives $100 monthly during the junior and senior years, plus books and expenses for Naval Science courses. He completes one summer training session prior to the senior year. Upon graduation he is eligible for a commission in the Navy or Marine Corps Reserve, and serves up to three years of active duty. Commissions are also available in the U. S. Navy Supply Corps and Civil Engineer Corps Reserve.

2. Naval ROTC Two-Year Contract Program  Open to those students in good standing who have at least two years remaining as an undergraduate. Those accepted must successfully complete a summer training program of approximately six weeks duration at a designated NROTC college or university. Successful completion of this six-week course qualifies candidates for enrollment at the junior level in the Naval ROTC Nonscholarship Program described above if he satisfies all other requirements. Upon enrollment he assumes the same obligations and receives the same privileges as those enrolled in the four-year nonscholarship program. Applicants should contact the Professor of Naval Science no later than April 13 (usually while sophomores) for entry in July.

3. Naval ROTC Scholarship Program  Open by nationwide competition to physically qualified male students between the ages of 17–21, who are U.S. citizens. Candidates receive $100 monthly plus four years' tuition, other fees of an instructional nature and textbooks for all University courses. The scholarship student completes three summer training sessions about six weeks each. Upon graduation, he is eligible for a commission in the Regular Navy or Marine Corps, and serves four years of active duty. Commissions are also available in the U. S. Navy Supply Corps and Civil Engineer Corps. For additional information please consult the Department of Naval Science, 25 Callaghan Hall.

Facilities

Campus Libraries  The University maintains a network of reading and research libraries located throughout the campus. Together, they contain more than 4,150,000 volumes and 98,000 current periodicals and serials.

The Main Library houses an extensive loan stack collection in the humanities and social sciences; a current periodical room; a Reference Service which offers valuable assistance in library use and bibliographical research; a Documents
Department containing official publications of the Federal, State, foreign, and international governments; a Map Room; a Newspaper and Microcopy Room; the Bancroft Library, which contains the Bancroft and Rare Books collections; the Morrison Library, a recreational reading collection; the South/Southeast Asia Library Service; a graduate reading room and reserve service for the humanities; and graduate reading rooms and reserve service for Art History and Classics.

The new Moffitt Undergraduate Library provides a substantial open stack collection of basic books and periodicals of interest to the undergraduate, significant books of contemporary concern, and reserve materials for undergraduate courses.

Branch and special libraries with collections in the biological, physical, and agricultural sciences, education, psychology, music, environmental design, anthropology, law, East Asian studies, librarianship, public health, mathematics, engineering, optometry, and social welfare are located on campus, usually in the same buildings as the academic departments or schools whose needs they serve.

All students are entitled to use these libraries, upon presentation of their registration card. However, borrowing privileges and access to the collection vary from unit to unit. For more information about the campus library system, please inquire at the General Reference Desk or Service Desk in the Main Library or the Reference Desk in the Moffitt Undergraduate Library.

Language Laboratory The Language Laboratory is located in the basement of the southernmost wing of Dwinelle Hall. The Laboratory has listening positions for as many as 183 students at one time. The tape library has more than 7,000 reels in more than fifty-five languages. Most are language lessons, but there are foreign literature readings as well. Facilities are normally scheduled for languages with large enrollments, but random listening is encouraged to the extent that facilities permit. Some of the popular language lesson series are available in a lending collection for home study. You may also buy copies of certain of the Laboratory’s materials at cost.

Sports and Recreation Harmon Gymnasium for men is equipped with two swimming pools, as well as squash, handball, volleyball, and tennis courts, athletic fields, and a variety of indoor facilities. It is open throughout the year, free of charge, primarily to every male student of the University, who may obtain, upon showing a current student registration card, a locker and free use of gym clothing and equipment. Apply at 2-B Harmon Gymnasium. Hearst Gymnasium offers similar advantages, primarily to women students. Apply at Office, 110 Hearst Gymnasium.

A wide variety of instructional, intramural, extramural, intercollegiate, and recreational athletic programs and sports clubs are offered by the Department of Physical Education, Department of Intercollegiate Athletics, and the ASUC. Strawberry Canyon Recreational Area serves the entire University community with swimming pools, lounging, play, and picnic-barbeque areas. Further information may be obtained by calling Haas Clubhouse.

Dining The Dining Commons is just north of the Student Union. On Sproul Plaza level: The Terrace provides hot meals, breakfast and lunch; grilled or
wrapped sandwiches; hot tasty soup and a selection of hot entrees in addition to fast snacks and hamburgers. *The Golden Bear* features continental style breakfast; luncheon, with waitress service; a menu selection of Salad Bar, Hof Brau Sandwiches, grilled items and two full-menu Hot Entree selections; plus a variety of desserts. *The Fence* provides carry-out snack service. On the lower plaza level: *The Cafeteria* serves a la carte hot lunch items, special low calorie plates, vegetable plates, and a great variety of snack foods. *The Bear's Lair*, in the Student Union building, has grill and fountain service. The Commons also operates a catering service for special functions and student activities on campus; a Mobile Unit—The Oskimobile—makes scheduled stops at various locations with snack and sandwich service; and there is an Office Coffee plan. A snack area specializing in espresso coffee is located in Wurster Hall. In addition coffee shop service is available at 4119 Dwinelle Hall and 24 University Hall. To arrange for Catering of Office Coffee Service call (64)2-3761.

**Student Union and Student Center** The Student Union, a six-level building located at the south entrance of the campus, is a focal point of student activities and recreation. It contains lounges, a television room, meeting rooms, Pauley Ballroom, an art exhibit area, a game room, a meditation room, a check-cashing service, a ticket office, the ASUC Store (a comprehensive book, stationery, and supply store), an information center, a bowling alley, a barber shop, a garage, a creative arts studio, the Bear's Lair, and facilities for the ASUC musical organizations. Operating costs of the Student Union are largely financed by revenues from ASUC enterprises located within the facilities.

Eshleman Hall, the student office building, houses the student officers and senators as well as other student activities, ASUC publications, and the Department of Intercollegiate Athletics. An auditorium and theater completes the Student Center.

**Computer Center** The Computer Center serves the entire campus by (1) providing and operating a Control Data 6400 system to meet the instructional and research needs of the campus, and (2) the development of both hardware and software.

A program library and a consultation service are maintained to provide information about the operating and programming systems to assist users. In addition to programming consultation, the Center has an applications programming group who will undertake programming tasks for users. The Center also provides a keypunching service for users of the computer.

**Lawrence Hall of Science** The Lawrence Hall of Science is a research center in science education. The Hall's program includes teacher training, student instruction, and public education. The Hall supports several research and curriculum development projects. In-service teacher training is available through workshops and summer institutes. The Discovery Van brings to Bay Area teachers the programs and instructional materials developed at the Hall. Students are reached through a school visits program offered during the week, and through after-school computer instruction and science classes. The public activity areas encourage individual participation through science exhibits and demonstrations.
A public program featuring films, lectures/demonstrations, and children's workshops is held on weekends and during the summer months.

Assistance and science education counseling is provided to all levels of education, from elementary through college. The Hall's facilities of special note are the science education library, student-teacher woodshops, the computer education facility, and the teaching amphitheater.

**Student Organizations and Activities**

**The ASUC** The Associated Students of the University of California is the official organization for student government. You automatically become a member upon payment of the ASUC fee along with other registration fees. This nonprofit organization, through its student-elected Senate, is responsible for directing a large variety of student activities and serves as official student spokesman in University affairs. You are urged to make use of your ASUC votes to secure the representatives you feel will serve you capably and articulately. Graduate students also elect departmental representatives to the Graduate Assembly, which concerns itself with graduate affairs.

**Graduate Assembly** The Graduate Assembly speaks for the ASUC on matters concerning graduate students. Graduate organizations elect department representatives (one per 100 students) to the Assembly meetings, held monthly during the academic year. The Assembly elects four officers, two ex-officio representatives to the ASUC Senate, and two representatives to the Statewide Graduate Senate and to the Graduate Council of the Academic Senate. The Assembly publishes a monthly newsletter, the GADFLY, and has a number of working committees on which graduate students are encouraged to participate. These committees have been concerned with such matters as the statewide Graduate Senate, library facilities, job placement, housing, graduate student orientation, and the quality of Berkeley Ph.D. programs. The Assembly invites graduate students to use the Commons Lounge in 340 Stephens Hall; Assembly offices are located at 239 and 241 Campbell Hall, 642-2175.

**The Community Projects Office (CPO)** This office, located in Eshleman Hall, serves as the ASUC clearinghouse for existing volunteer opportunities in the Bay Area and as the resource agency for the development of new projects. If you are interested in doing volunteer work of any type, the CPO provides an orientation program; files and information on the various projects; a library of commentary books, texts, and tutoring aids; and also sponsors numerous workshops in areas such as co-operative buying and reading instruction. The CPO is also working directly with a large number of Bay Area organizations, developing resources and doing research on campus, and has the necessary information and contacts for those interested in starting new projects in any area. The CPO employs a number of part-time student employees and a large number of student volunteers. For these students, the CPO provides a meaningful and relevant link to the community while at the same time allowing the students to work on the campus.

**SUPERB** The Student Union Program, Entertainment, and Recreation Board, located in 303 Eshleman Hall, is responsible for developing and supervising an activities program for the ASUC to satisfy the cultural, educational, recreational,
and social needs of the campus. Programs and activities planned include speakers, dances, exhibits, coffee hours, recreational exhibitions, cabarets, drama, movies, music and art festivals, and special presentations.

**Student Publications** Four student publications provide opportunities for activities in all phases of publishing: writing, editing, reporting, art and design, advertising, sales, and general management. They are:

- **The New Pelican**—the quarterly magazine; specializes in articles and features of current interest.
- **The Blue and Gold**—the official yearbook, covering virtually all phases of campus and academic life; it is a permanent record of the year's events.
- **California Engineer**—a magazine of engineering and scientific topics, for both technical and general interests.
- **Occident**—one of the oldest campus publications, it is the literary magazine, featuring poetry, fiction, criticism, and commentary, by students, faculty, and distinguished guest writers.

The center for all student publications except the Pelican is Eshleman Hall.

**Lectures, Music, Drama, Debate** The University offers a broad variety of extracurricular activities in the humanities. These include:

- Committee for Arts and Lectures (CAL)—a program of drama, music, dance, films, and lectures. Some events are open to students and to the University community without admission charge. For those events requiring tickets, a reduced fee is usually available for registered students. Brochures announcing committee events and weekly notices may be obtained at the CAL Box Office, 101 Zellerbach Hall, or the Information Desk of the Student Union. For information, or to make telephone reservations, call 642-2561.
- Music—a large selection of groups, including the Men's Glee Club, the University Chorus, Repertory Chorus, Jazz Ensemble and Treble Clef, California Band, and others which students may join for academic credit. Each week, also, there is a noon concert, open free of charge to the general public. The Symphony Forum is a program sponsoring record concerts on campus and providing for students inexpensive San Francisco Symphony tickets.
- Theater, Television, and Radio—The Department of Dramatic Arts offers course credit to any student participating, either in a performing or backstage capacity, in one of its excellent stage productions. There is also a Radio-Television Theater, and Orchesis, a workshop in the study and performance of modern dance.
- Debate—Varsity Debate and University Roundtable (the latter open to all regardless of experience), are the two debate organizations of the Berkeley campus, nationally respected for their excellence.

For further information about these and many other campus events, please consult the Information Desk in the Student Union.

**Special Interest Clubs** Besides regular ASUC-sponsored activities, there are more than 250 registered student organizations on campus serving special interests and abilities. In the spring and fall of each year, an Activities Fair is held in Lower Sproul Plaza to acquaint you with many of the organizations and to give you an opportunity to join.
Academic and professional societies, including clubs organized by many of the schools and departments, as well as national professional fraternities, provide students with an opportunity for seminars, discussions, lectures, tutoring services (both giving and receiving), and communication with members of an academic or professional field. Honorary academic societies are open to students of outstanding scholastic ability. These groups include: Honor Students' Society; Phi Beta Kappa (a national society of historical renown, open by invitation to the top seniors in nonprofessional fields); Tau Beta Pi (a national society of upper division students in the College of Engineering and in Chemical Engineering); and various other groups within the several disciplines. Most of these groups offer tutoring services.

Hobby and recreational groups abound. And while the University, as a State-supported institution, does not offer chapel services or religious activity on campus, there are more than 35 churches and student religious clubs located within a few blocks of the campus.

International House  International House is a coeducational residence and program center for American and foreign students, primarily at the graduate level. Its activities include cultural and social events, home hospitality, and educational tours. The program is designed to promote better understanding among all nationalities. For application and further information, write or call International House, University of California, Berkeley, California 94720; telephone number (area code 415) 642-9470 or 642-9490.

General

The University Press  The University of California Press is one of the largest university presses in the country. It publishes scholarly books, about forty monograph series, and eight journals. The separate books (including a line of quality paperbacks) number about one hundred and fifty each year. The press serves all campuses of the University equally; its publishing program carries the work of the faculty beyond the campuses themselves.

The Alumni Association  More than 55,000 graduates of the University find the California Alumni Association a means of working for the continued welfare of the University and its student body. The California Alumni Foundation provides financial assistance to more than 450 students each year, as well as funds for research, library acquisitions, and campus improvements. Members also receive advance application for football tickets, exclusive low rates at the Lair of the Bear summer camps at Pinecrest and discount and preferential treatment at Tahoe's Four Seasons Lodge, and use of the facilities of the headquarters of the Association, Alumni House, where students and alumni alike are always welcome. The California Monthly magazine and a program of alumni meetings enable members to remain in close touch with the University and with one another. Information on young alumni programs; the traditional alumni events on Charter Day and Commencement; club activities throughout the state, the nation, and abroad, on foreign tours, and special events, is available at Alumni House.
Study Abroad for Undergraduate Students  As an undergraduate student at Berkeley, you enjoy a number of opportunities to study abroad at the following study centers around the world.

American University of Beirut, Lebanon
University of Bergen, Norway
University of Bordeaux, France
Chinese University of Hong Kong
Georg-August University, Goettingen, Germany
Hebrew University, Jerusalem
University of Ghana, Legon-Accra, Ghana
Intercollegiate Center for the Study of Classics in Rome
International Christian University, Tokyo, Japan
University of Lund, Sweden
University of Madrid, Spain
Mexico City Center
University College, Nairobi, Kenya
University of Padua, Italy
Paris (Graduate Teaching Credentials Program)
Universities of Pau and Paris
Trinity College of Dublin University, Ireland
Universities in United Kingdom

To be eligible, you must have a minimum of 2.75 overall grade-point average (3.0 for United Kingdom and Africa). For most programs, you are expected to complete with a grade of B the equivalent of six quarters of the language in which you plan to study. Exceptions to this language requirement are the programs in Africa, Hong Kong, Israel, Japan, Lebanon, Norway, Sweden, and the United Kingdom. For the Classics Program in Rome (Consortium with Stanford University), a proficiency in Latin is required.

You receive full credit for the work taken overseas. However, the number of courses you may take abroad in your major, and the extent to which the work overseas satisfies breadth requirements, is subject to the approval of your department or college.

The undergraduate programs are intended primarily for juniors. If you wish to participate in the program as a senior, you should be aware of the senior residency requirement of your college which probably will require additional study at Berkeley for two quarters upon completion of the year abroad. Also you should be aware that students are usually limited to 195 units in completing an undergraduate degree.

The estimated cost of study abroad varies according to the centers but averages about ten to fifteen percent more than in Berkeley. University scholarships, loans, and grants may be used to finance the year abroad.

Provision for graduate study has been included for most of the programs. Graduate students who wish to apply to study abroad on independent research projects, and who have satisfactorily completed a year of full-time graduate study at Berkeley, may do so if they obtain necessary approvals.

If you are interested, consult your academic advisers and the study abroad counselors in the International Education Office, Room 104-A, Building D, 2538 Channing Way.

University Police  The University of California Police Department was established by the State Legislature to perform primary and general police service
functions on the campuses, the properties, and dormitories of the University of California. Section 830.2 of the Penal Code extends to the University Police full peace officer powers and affords them primary law enforcement responsibility including the investigation of criminal offenses committed within the jurisdiction of the Department. Police service is available twenty-four hours a day at the University Police Office, Room 2, Sproul Hall, or by telephoning (64)2-6760. The University Police also operate a lost-and-found service, open from 10:00 a.m. to 4:00 p.m., Monday through Friday. For all emergency services including police, fire, or ambulance, call (64)2-3333.

Fees* and Expenses

It is extremely important that a student carefully consider the total financing of his education, from his entering quarter to the completion of his degree objective. If financial help will be needed, beyond those funds which the student or his family are able to provide, the student should make the necessary applications for financial assistance well in advance of his enrollment. He should pay particular attention to early deadline dates of application for grants, scholarships, work-study and National Direct Student Loans. While the needs and resources of each student differ, the University can provide a general list of fees and expenses normally encountered.

Part of the fees may be refunded to students who cancel their registration prior to the first day of classes or who withdraw before the beginning of the sixth week of classes of any quarter. A separate circular, STUDENT FEES AND DEPOSITS, gives information on refunds. This circular is available from the Registrar.

TABLE OF FEES AND EXPENSES (Fees are subject to change without notice)

Certain fees are paid at the time of registration by each student. These fees are listed and described below.

<table>
<thead>
<tr>
<th>Student Category</th>
<th>Fall, Winter, or Spring Term</th>
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<tbody>
<tr>
<td></td>
<td>Fall or Spring Term 1973–74</td>
</tr>
<tr>
<td>Resident Undergraduate</td>
<td>$212.50</td>
</tr>
<tr>
<td>Nonresident Undergraduate</td>
<td>712.50</td>
</tr>
<tr>
<td>Foreign Undergraduate</td>
<td>725.50</td>
</tr>
<tr>
<td>Resident Graduate</td>
<td>232.50</td>
</tr>
<tr>
<td>Nonresident Graduate</td>
<td>732.50</td>
</tr>
<tr>
<td>Foreign Graduate</td>
<td>745.50</td>
</tr>
<tr>
<td>Resident Graduate, School of Law</td>
<td>$353.75</td>
</tr>
<tr>
<td>Nonresident Graduate, School of Law</td>
<td>1,103.75</td>
</tr>
<tr>
<td>Foreign Graduate, School of Law</td>
<td>1,123.25</td>
</tr>
</tbody>
</table>

EXPLANATION OF FEES AND EXPENSES

Required Fees

University Registration Fee—$100 per quarter; $150 per term for students in the School of Law. Paid by all students. Covers normal expected usage of such

* Fees are subject to change without notice.
facilities as laboratories, gymnasium, counseling and placement services, health service, etc.

Educational Fee—Paid by all undergraduates at $100 per quarter, by students in the School of Law at $180 per term, and by all other graduate students at $120 per quarter. Used to support a portion of the cost for the educational program.

Berkeley Campus Fee—Paid by all students in the amount of $12.50 per quarter and by students in the School of Law in the amount of $18.75 per term. Provides support for a wide range of activities sponsored by the ASUC, covers use of the Student Union, helps pay costs of construction of the Union building, and assists with the provision of ethnic studies on the Berkeley campus.

Nonresident Tuition—$500 per quarter; $750 per term, School of Law. See rules on page 15 to determine whether this fee is applicable.

Foreign Student Health Insurance—$13 per quarter; $19.50 per term, School of Law. Required of all students on nonimmigrant visas. Payment of the fee for three consecutive quarters (two terms in the School of Law) covers the student for the full academic year, including summer.

Additional Fees and Expenses

Subject A Fee—$45
Applies to those who are required to enroll in the Subject A course.

Athletic Privilege Card—$12
Optional. Permits free admission or reduced rates to most University athletic events.

Student Health and Life Insurance
Optional, available through ASUC. Provides coverage, beyond normal service of the Student Health Service, in any of several standard health and hospitalization plans; has additional advantage of including student's spouse. Rates lower than normal adult rates.

Books and Supplies
Normally about $150–$200 a year on the average.

Living Expenses
Room and board in living groups will range from $900 to $1,600 for the academic year, with an average of around $1,300. Apartment housing (rent, utilities, and food) if shared with others for nine months, would have the same range. If leased for twelve months the cost, of course, would be higher.

Entertainment and Miscellaneous Costs
A student will need to take into account laundry, cleaning, transportation, and other personal expenses which will average from $450 to $550 per academic year.

Total Estimated Expenses Per School Year
The following approximates the total budget for three quarters. This estimate is based on fees and expenses for single undergraduate students:

Resident Students .................................................. $3,000.00
Nonresident Students .................................................. 4,500.00
Research at Berkeley

The Berkeley campus is renowned for its programs of faculty and graduate student research, which are conducted within teaching departments and organized research units. In some instances, special departmental laboratories have been established to provide essential services to instruction and research projects.

Organized research units are established and administered separately from the teaching departments. These units are designed to be interdisciplinary in nature and organized around the work of a group of faculty and graduate students whose research interests are more general in nature than can easily be encompassed in a single discipline. While the organized research unit aims primarily to support the research of faculty and to assist in graduate student training, public service and in some instances a degree of mission orientation may be appropriate.

Organized research units may bear the designation of Institute, Center, Laboratory, Museum, or Station, depending on the nature of the activity supported and the organization visualized when a particular unit was established. These units are grouped administratively according to the breadth of interest they represent. The grouping may be within the Graduate Division, a School, or a College. Specific administrative groupings are as follows:

**College of Agricultural Sciences**
- Agricultural Experiment Station
- International Center for Biological Control
- Giannini Foundation

**School of Business Administration**
- Center for Research in Management Science

**College of Engineering**
- Earthquake Engineering Research Center
- Electronics Research Laboratory
- Operations Research Center
- Sanitary Engineering Research Laboratory
- Sea Water Conversion Laboratory
- Institute of Transportation and Traffic Engineering

**School of Forestry and Conservation**
- Forest Products Laboratory
- Wildland Research Center

**Graduate Division**
- Bodega Marine Laboratory
- Institute of Business and Economic Research
- Center for Research and Development in Higher Education

Institute of Human Development
Institute of Industrial Relations
Institute of International Studies
Center for Chinese Studies
Center for Japanese and Korean Studies
Center for Latin American Studies
Center for Slavic and East European Studies
Center for South and Southeast Asia Studies
Lawrence Hall of Science
Institute of Race and Community Relations
Space Sciences Laboratory
Survey Research Center
Institute of Urban and Regional Development
Center for Planning and Development Research
Center for Real Estate and Urban Economics
White Mountain Research Station

**School of Law**
- Earl Warren Legal Institute
- Center for the Study of Law and Society

**College of Letters and Science**
- Archaeological Research Facility
- Field Station for Behavioral Research
Cancer Research Genetics Laboratory
Institute of Governmental Studies
Jepson Herbarium
Institute of Human Learning
Lowie Museum of Anthropology
Center for Pure and Applied Mathematics
Museum of Paleontology
Institute of Personality Assessment and Research
Laboratory of Radio Astronomy
Seismographic Stations
Museum of Vertebrate Zoology
Virus Laboratory

School of Librarianship
Institute of Library Research

School of Public Health
Naval Biomedical Research Laboratory

Lawrence Berkeley Laboratory
Laboratory of Chemical Biodynamics
Donner Laboratory
Inorganic Materials Research Division
Nuclear Chemistry Division
Physics Division

In addition to the officially established organized research units, there are numerous special facilities for the support of faculty and student programs.
For purposes of administration and instruction, the University is divided into a number of academic and administrative subdivisions, ranging from departments, colleges, and schools to a variety of research centers and institutes. At Berkeley, there are eighteen major academic subdivisions—the Graduate Division, five colleges, and twelve schools:

<table>
<thead>
<tr>
<th>Colleges</th>
<th>Schools</th>
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<tr>
<td>Agricultural Sciences</td>
<td>Business Administration</td>
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<tr>
<td>Chemistry</td>
<td>Business Administration,</td>
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<tr>
<td>Engineering</td>
<td>Graduate</td>
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<tr>
<td>Environmental Design</td>
<td>Criminology</td>
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<tr>
<td>Letters and Science</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Forestry and Conservation</td>
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</tbody>
</table>

A college accepts students directly from high school or as transfers from another institution and offers undergraduate instruction, normally as a four-year program, leading to the bachelor's degree; however, departments in all the colleges offer programs of study beyond the bachelor's degree, in conjunction with the Graduate Division. The colleges are designed to provide the student with a thorough background in one or more fields of study, and to give him some acquaintance both with allied fields and with general fields of knowledge. Although a student may take some courses in another college or school, his degree requirements are determined by the deans and faculty of the college in which he is enrolled. The College of Letters and Science emphasizes the study of the general academic areas for their own sake, whereas the other colleges emphasize the study of these areas in relation to applied arts and sciences.

A school normally begins instruction at the upper division or graduate level and is designed to provide a student with training preparatory to a specific profession. The school presumes its students to have acquired before entrance some background in general academic areas. The degrees offered by the schools are accredited by statewide and national boards and associations for the various professions, and normally allow the graduating student a direct entry into his field.

Each of the colleges and schools has its own administrative officials and its own regulations for earning degrees, and since each undergraduate student at the University belongs either to a college or a school he is expected to satisfy requirements for the degree on three levels: University, college or school, and field of concentration. This section provides a broad survey of the colleges and schools and their degree programs. For further information, see the individual school or college announcements.

**COLLEGE OF AGRICULTURAL SCIENCES**

The College of Agricultural Sciences offers undergraduate instruction leading to the Bachelor of Science degree and, when completed, opportunities for immediate employment exist in most fields.
Three curricula are offered—Agricultural Sciences (with seven majors), Pest Management, and Conservation of Natural Resources. Related curricula in the College are also available in preforestry and preveterinary.

 Majors in Agricultural Sciences are: agricultural economics; agricultural science; dietetics; entomology; food and nutritional sciences; genetics; and soils and plant nutrition. Preparation for graduate work in plant pathology is offered under the agricultural science major. The Pest Management Curriculum is jointly sponsored by the Departments of Entomological Sciences and Plant Pathology. The curriculum in Conservation of Natural Resources is an experimental field major offered in cooperation with the School of Forestry and Conservation. The preforestry program, although administered by the College of Agricultural Sciences, is described under the Forestry and Conservation section.

 The College also administers a preveterinary curriculum for those students preparing for subsequent work in the School of Veterinary Medicine at Davis. The Dean’s Office, 101 Giannini Hall, will provide the name of an adviser and general information about the program. For details concerning the complete program, consult the Dean of the School of Veterinary Medicine, University of California, Davis.

 Graduate Programs

 Graduate instruction leading to a higher degree is available in the following fields: agricultural economics; biophysics (see Cell Physiology and Soils and Plant Nutrition); comparative biochemistry (see Cell Physiology, Nutritional Sciences, and Soils and Plant Nutrition); entomology; food science; genetics; microbiology (see Nutritional Sciences and Soils and Plant Nutrition); nutrition; parasitology (see Entomology and Parasitology); plant pathology; plant physiology (see Cell Physiology and Soils and Plant Nutrition); and soil science.

 For further information, consult the ANNOUNCEMENT OF THE COLLEGE OF AGRICULTURAL SCIENCES, available free of charge from the Dean’s Office, 101 Giannini Hall.

 **COLLEGE OF CHEMISTRY**

 The College of Chemistry comprises two departments, the Department of Chemistry and the Department of Chemical Engineering. The College offers programs leading to the B.S., M.S., and Ph.D. degrees in chemistry or chemical engineering. The College of Letters and Science offers a chemistry major leading to an A.B. degree through a curriculum with a greater proportion of courses in the humanities and social sciences than is included in the B.S. chemistry program.

 For information on recommended high school preparation for admission, as well as specific requirements for degrees, see the ANNOUNCEMENT OF THE COLLEGE OF CHEMISTRY.

 **COLLEGE OF ENGINEERING**

 The College of Engineering offers programs in a wide variety of engineering fields, based on the concept that the engineer must be well grounded in the
sciences and in social and humanistic studies, with a full command of the principles and practices of his profession.

Four-year undergraduate curricula are offered in the following professional fields: civil engineering, electrical engineering and computer sciences, industrial engineering and operations research, mechanical engineering, and materials science and engineering (ceramic engineering and metallurgy). Each of these curricula is administered by a separate department within the College and each emphasizes a core program of science and engineering subjects related to the particular field. In addition, there is a curriculum in Engineering Science with programs in bioengineering, engineering geoscience, engineering mathematics or mathematical statistics, and engineering physics. Double Major programs leading to a B.S. degree in two fields are offered through most departments in conjunction with either Materials Science and Engineering or Nuclear Engineering.

High school preparation for study in engineering includes the following: algebra (2 units); plane geometry (1 unit); trigonometry (½ unit); physics or chemistry, preferably both (1 or 2 units). Advanced mathematics courses are acceptable if they include the mathematics topics listed above. It is suggested that an engineering student also include a minimum of 1 unit of high school mechanical drawing as part of his preparation since graphic communication is an essential part of engineering.

Students may refer to the Announcement of the College of Engineering for a detailed presentation of the curricula available. Specific courses are listed in the Announcement and in the course section of this catalogue.

Graduate programs are offered leading to the Master of Science and Doctor of Philosophy degrees for study emphasizing engineering applied sciences, and Master of Engineering and Doctor of Engineering degrees for advanced professional studies of design and development. Fields of study include civil engineering, electrical engineering and computer sciences, industrial engineering and operations research, mechanical engineering, nuclear engineering, materials science, engineering geoscience, fluid mechanics, applied mechanics, and naval architecture. Specific graduate programs may also be found in the Announcement of the College of Engineering.

College of Environmental Design

The College of Environmental Design is composed of the departments of Architecture, City and Regional Planning, Design, and Landscape Architecture.

Undergraduates entering the College will enroll in a four-year curriculum leading to the academic degree of Bachelor of Arts with a major in either architecture or landscape architecture. On the graduate level the College presently offers curricula leading to the Master of Architecture, Master of Landscape Architecture, Master of City Planning, and Master of Arts in Design; and the Doctor of Philosophy in Architecture, Landscape Architecture, and in City and Regional Planning. The Master of Architecture degree will be the first professional degree applicable to requirements for state registration in architecture. The Master of Landscape Architecture degree is similarly applicable to the registration of landscape architects.
It is recommended that high school preparation for the College include mathematics through trigonometry, one year of freehand drawing, and one year each in two of the physical or natural sciences.

The A.B. degree programs in the College require the completion of 180 units. A minimum of 40 units in the major must be completed at Berkeley as well as 24 units of environmental studies in the College. Breadth requirements consist of completing 60 units in course work offered in colleges other than Environmental Design. The remaining 56 units are elective. No more than 60 units may be completed in any one department for degree credit.

Procedures for undergraduate admission, registration, and enrollment are identical to those of the University in general. However, a student who has credit for more than 105 quarter units of university-level work is encouraged to complete the A.B. degree in his current major and apply for admission to the professional programs at the graduate level. An undergraduate major in architecture or landscape architecture is not prerequisite for admission to graduate study in these fields. Enrollment in the College beyond 195 quarter units is subject to approval of the Dean. Consequently, a transfer student who has credit for more than 130 quarter units, is not normally admitted to the undergraduate program. Students who are interested in graduate study should obtain from the Dean of the Graduate Division the circular Admission to Graduate Study, which outlines general University requirements for admission. Application is made directly to the Graduate Division of the University.

For specific undergraduate and graduate programs and degree requirements in the environmental design fields, refer to the course section of this catalogue and the Announcement of the College of Environmental Design.

**COLLEGE OF LETTERS AND SCIENCE**

The College of Letters and Science offers the undergraduate student a variety of programs leading to the Bachelor of Arts degree in four academic years of full-time study. The basic concern of the College is with the wholeness of knowledge, a theme which is present in all of our various programs. Although no single program can by itself introduce the undergraduate student to the entire range of human knowledge, each of the many programs is designed to aid the student in establishing a structured awareness of the present condition of knowledge and how it has developed. Each program endeavors to cultivate an appreciation for past and present ideas and a capacity for generating new ones. Each strives to foster keen observation, critical analysis, and an awareness of the relation between perceived reality and theoretical abstractions derived from it.

For the student, the first two years are a time of exploration, experimentation, and decision. The last two years are a period of confirmation and of the acquisition and refinement of special knowledge, usually in connection with a department. The College's departments are devoted to instruction and research in the several academic subjects. Each department represents a style of study and communication and a refined development of a set of structured ideas. The subjects of the departments overlap and complement each other.
Requirements for the Bachelor of Arts Degree

The student must complete a minimum of 180 units, distributed according to regulations which appear in the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE. There are also scholarship, residence, breadth, and major requirements; these are described in the Announcement as well. Brief descriptions of the breadth and major requirements appear below, and major programs appear in this publication under the department or group heading. In addition, the student must satisfy the University requirements in Subject A, in American History, and in American Institutions; these are described on page 24.

Breadth Requirements  Each student in the College is required to include in his program a study of the use and appreciation of the English language. This requirement is to be completed in the freshman year in order that the student may develop skill in the communication of ideas and a sensibility for language which will facilitate and enrich his further studies. There is also a minimal foreign language requirement, which almost all of the students admitted to the College will have satisfied in high school. If not satisfied at the time of admission, the requirement must be completed without delay. The third breadth requirement involves exploration in several broad areas of knowledge, the humanities, the natural sciences, and the social sciences. This exploration by the student is intended to deepen his appreciation for language, literature, and the arts, to enable him to comprehend the structure of living and nonliving matter and the environment of man, and to facilitate his understanding of the individual and social behavior of human beings. Completion of this requirement may be spread over the four years of college attendance.

Major Programs  Each student must pursue and complete a major program, the object of which is to provide him with a limited experience in specialization. There are forty-six departmental major programs, ranging from art to zoology. In addition, there are group majors in communication and public policy, environmental studies, genetics, neurobiology, religious studies, and social welfare. There are also field majors in humanities, biological sciences, physical sciences, and social sciences. Moreover, a student in good academic standing may, with permission of the Dean and support and supervision of a College faculty member, pursue an individual major designed to satisfy his special academic goals.

Special Programs

The Division of Interdisciplinary and General Studies (DIGS) and the Residential Program in History and Literature are included in the College and are described in the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE. Both of these programs permit the student to spend a considerable portion of his time in the exploration of a unified area of study. Both of the programs also allow for free electives and are designed to qualify the student, on completion, for entrance into any one of a range of major programs. The student in the College of Letters and Science normally constructs his own program for the freshman and sophomore years by making a choice of individual courses. His selection is guided by his adviser, within limits set by College requirements and
by the demands of his anticipated major subject. These special integrated programs are offered as optional alternatives to this procedure.

Letters and Science List of Courses

The regulations governing the List are to be found in the Announcement of the College of Letters and Science.

SCHOOLS OF BUSINESS ADMINISTRATION

School of Business Administration

The School of Business Administration admits students at the junior level and offers a curriculum leading to the undergraduate degree of Bachelor of Science in Business Administration. The primary function of the School is to prepare students for eventual responsible administrative and executive positions in business, non-profit and governmental organizations, and for business ownership. You may specialize in such fields as accounting, applied economics, finance, marketing, management science, organizational behavior, and real estate and urban land economics.

Prior to admission to the School, you should obtain an Announcement of the School of Business Administration, available in 310 Barrows Hall. This contains complete information concerning admission and degree requirements, as well as important prerequisites to admission. Should you need further assistance, counselors in the School of Business Administration will assist you.

Graduate School of Business Administration

The Graduate School offers curricula leading to the Master of Business Administration degree and to the more specialized Master of Science degree. These curricula afford opportunity for advanced and specialized training based either upon the fundamental undergraduate curriculum in Business Administration or upon undergraduate study in other fields.

The core courses for the master’s degree include basic work in economic analysis, quantitative decision models and techniques, accounting, political, social, and legal environment of business, finance, marketing, production, and organizational behavior. All graduate students must maintain a B average in all courses and must pass a comprehensive examination.

You may pursue a program leading to the Ph.D. in Business Administration if you wish to prepare for university and college teaching and research or for high-level research positions in business or government.

For detailed information, consult the Announcement of the Graduate School of Business Administration.

As part of the Extended University, the Graduate School also offers an evening program in San Francisco leading to the Master of Business Administration degree. For further details, write to the Director, San Francisco Evening MBA Program, 350 Barrows Hall, University of California, Berkeley, California 94720.
SCHOOL OF CRIMINOLOGY

The School of Criminology offers opportunities for the study of the nature, causes, and consequences of crime and criminal justice. There are two relatively distinctive programs, and students are expected to choose one upon admission.

General criminology draws upon the concepts and methods of the social and behavioral sciences for an understanding of crime and criminal justice. Economic, political, psychological, and sociological factors are considered from historical, comparative, and systematic perspectives.

Criminalistics is concerned with the application of natural science concepts and methods to law enforcement and crime investigation.

The first program leads to the Bachelor of Arts degree and the second to the Bachelor of Science degree on the undergraduate level. Both lead to the Master of Criminology and Doctor of Criminology on the graduate level.

Undergraduate students are admitted to the School at the beginning of their junior year, after completion of a 90-unit lower division curriculum. A 2.0 or better grade-point average is required for admission. Prerequisite courses for undergraduate admission are listed on page 167. Specific requirements for all degrees may be found in the Announcement of the School of Criminology.

Students are generally admitted during the fall quarter only for study leading to the B.A., B.S., M.Crim., or D.Crim. Completion of the requirements for the M.Crim. degree ordinarily takes four to five quarters after the bachelor's degree. The D.Crim. requirements ordinarily take an additional six quarters.

SCHOOL OF EDUCATION

The School of Education offers three principal areas of study: a teaching credential program for those preparing for teaching positions in public schools; programs leading toward credentials for administrative, supervisory, and pupil personnel services in the public schools; and degree programs, both academic (M.A. and Ph.D.) and professional (M.A.T. and Ed.D.). The M.A.T. (Master of Arts in Teaching) program is available in Comparative Literature, English, and German. This program combines a major emphasis in an academic field with professional training in education.

As an applicant to any program in the School of Education, you must be admitted to the Graduate Division. If you plan to enter teacher education programs, you should confer with an adviser in the Student Personnel Office, 1615 Tolman Hall, early in your university career, because the credentials programs involve specific courses you must complete during your undergraduate years.

As a holder of a State teaching credential, you are qualified for service in the public schools of California. To be a candidate for this credential, you must hold a bachelor's degree, with a major in a teaching field (not education). A minor may be required for certain programs. The teacher education program at Berkeley normally comprises one postgraduate year following receipt of the bachelor's degree, during which time you take basic courses in education, obtain actual teaching experience in a public school, and take further courses in your major or minor field.
For further details concerning the requirements and areas of specialization for all credential and degree programs in education, consult the Announcement of the School of Education.

The teaching credential programs outlined in the Announcement of the School of Education for 1973–1974 will be in operation only during that academic year. Programs are now being developed to comply with the new licensing law (Ryan Act of 1970) which becomes effective in September 1974. Students applying for teaching credential programs for the academic year 1974–1975 may obtain information concerning the new Ryan Act programs from the Student Personnel Office, 1615 Tolman Hall.

SCHOOL OF FORESTRY AND CONSERVATION

Undergraduate programs are offered in forestry, in wood science and technology, and in the conservation of natural resources. The major in forestry is designed to educate professional resource managers and scientists oriented to forests and wildlands. In contrast, the conservation major provides a broad education oriented to environmental issues. The program in wood science prepares students for managerial and scientific careers in the wood-using industries.

Students are admitted to the School in the junior year. The preparatory lower division program may be taken at any accredited college or through the College of Agricultural Sciences at Berkeley. A program of summer field courses is prerequisite to the balance of the upper division program in the major in forestry. This ten-week program includes 15 units of course work offered at the U.C. Forestry Camp, Meadow Valley, Plumas County.

High school preparation should include: algebra (2 units), plane geometry (1 unit), trigonometry (½ unit), and laboratory science (1 unit). An additional year of laboratory science (preferably chemistry or physics) and a half-year of mechanical drawing are strongly recommended.

Graduate programs are offered in wildland resource science, in forestry, in range management, and in wood science and technology. The Master of Forestry is the advanced professional degree in this field and is based on an additional year of study designed to widen the student's grasp of forestry principles and to increase his ability to apply the principles to resource management problems. The Master of Science in wildland resource science provides a program for students interested in specialization in some field of forestry such as forest influences, silviculture, forest economics, wildlife habitat management, or remote sensing. The M.S. in range management, which is administered by an interdepartmental group, provides for specialization in the scientific basis of managing range lands and related wildland areas. The M.S. in wood science and technology, also administered by an interdepartmental group, provides for graduate specialization in wood mechanics, wood physics, wood chemistry, wood anatomy, or wood processing.

Programs leading to the Ph.D. are offered in wildland resource science; in wood science and technology; and in sciences related to wildland resources, forestry, and range management such as agricultural economics, botany, entomology, genetics, plant pathology, plant physiology, soils, and zoology.
For further information concerning course requirements and areas of specialization, consult the Announcement of the School of Forestry and Conservation or a faculty adviser at 145 Mulford Hall.

**SCHOOL OF JOURNALISM**

The School of Journalism offers a program leading to the degree of Master of Journalism (M.J.). The program seeks to provide training in the skills and techniques of journalism and a knowledge of the traditions and principles of the profession, combined with the study of other academic disciplines that constitute the subject matter of journalism.

A candidate for the M.J. degree shall have completed four to six quarters in graduate study in journalism and related disciplines. He shall have completed 42 units of approved upper division or graduate courses, including not less than 21 units in graduate courses in journalism, and shall have presented an acceptable thesis or reporting project. A student generally will take about two-thirds of his courses in journalism and one-third in a related field of specialization.

An applicant for graduate study should hold a bachelor's degree comparable to that given by the University of California. Requirements and procedures are outlined in the circular Admission to Graduate Study, available at the office of the Dean of the Graduate Division, and in the Announcement of the School of Journalism.

The School also offers upper division courses for undergraduates and an undergraduate major in journalism leading to an A.B. degree. The undergraduate program is described in the Announcement of the School of Journalism: Undergraduate Program, available at the School office, 607 Evans Hall.

**SCHOOL OF LAW**

The School of Law (Boalt Hall) has a broad three-year curriculum leading to the J.D. degree and a postgraduate program for students working toward the Master of Laws and Doctor of the Science of Law degrees. In addition to preparing its students to practice law, the School attempts to develop the study of law and to foster legal research. The School is a member of the Association of American Law Schools and is approved by the American Bar Association. Its graduates are qualified to become applicants for admission to practice in any state of the United States.

No single "pre-law" major is required or even recommended. However, these suggestions are made: a student should learn to write by taking courses in which his work is vigorously edited; enroll in courses demanding analytical skills; obtain some breadth in humanities and social sciences that will help in understanding the social context within which legal problems arise; and acquire a general understanding of the business world, since a significant portion of legal problems are related to the business community. But one should not be deterred from pursuing the study of law merely because his undergraduate education has not emphasized these areas. Diversity of undergraduate education enhances and enriches the legal experiences of all the students.

The School does not offer a part-time or evening program. The work of the first year is prescribed; the second and third years' courses are elective.
The graduate program is designed for the student who wishes to broaden his professional education by study of legal history, international and comparative jurisprudence, or the relations of law and other social sciences; to supplement his professional education by study of special subjects (e.g., taxation, labor law, international law, marital property, procedure, corporations); or to obtain special training in preparation for law teaching, legal research, government service, or legislative drafting.

For further information and admission requirements, consult the ANNOUNCEMENT OF THE SCHOOL OF LAW, a copy of which may be obtained by writing to the Admissions Office, 220 Boalt Hall, Berkeley, California 94720.

[!] SCHOOL OF LIBRARIANSHIP

The School of Librarianship offers a one-year basic curriculum at the graduate level leading to the Master of Library Science degree, which qualifies the holder for professional service in libraries and other information agencies. It offers a post-master's program leading to one of three Certificates for specialized study. It offers a program leading to the Ph.D. degree for students interested in advanced research and teaching in librarianship and the information sciences, and a design-oriented program, aimed at giving preparation for administrative and planning positions, leading to the professional doctorate, the Doctor of Library Science. Admission to the degree programs is contingent upon admission to graduate standing. The School also offers undergraduate and graduate courses in Bibliography for non-majors in Librarianship.

For further details on the School's programs, consult the ANNOUNCEMENT OF THE SCHOOL OF LIBRARIANSHIP.

[!] SCHOOL OF OPTOMETRY

The School of Optometry provides training in the practice of optometry, drawing upon the principles of anatomy, optics, physiology, and psychology, and includes the study of both environmental and personal factors influencing visual performance.

The four-year program qualifies you for the degree of Doctor of Optometry, which qualifies you to take the state board examinations in all states. The first year is devoted to more advanced study of basic sciences which form the background for optometry; the second and third years are devoted to the science of optometry and the acquisition of technical skills; the fourth year is devoted to the practice of optometry and the detailed study of specialized areas.

The School of Optometry also offers an undergraduate program in physiological optics leading to the B.S. degree. The primary purpose of this curriculum is to prepare students for the graduate program in physiological optics.

The graduate program in physiological optics leads to the Master of Science degree and the Doctor of Philosophy degree. Offered in cooperation with other departments of the University, this program is designed to prepare students for a career in teaching and research in the sciences of vision.

For admission and degree requirements, consult the ANNOUNCEMENT OF THE SCHOOL OF OPTOMETRY.
**SCHOOL OF PUBLIC HEALTH**

Graduate curricula in the School of Public Health provide preparation for positions of leadership in health agencies, and for research and teaching in the health sciences.

The professional degrees, Master of Public Health (M.P.H.) and Doctor of Public Health (Dr.P.H.) are offered in the following fields of study:

- Behavioral Sciences
- Biomedical Laboratory Sciences
- Biostatistics
- Community Health Nursing
- Administration
- Environmental Health Sciences
- Epidemiology
- Health Administration & Planning
- Hospital Administration
- Maternal & Child Health
- Public Health Education
- Public Health Nutrition
- Public Health Social Work

Within some of these curricula, special fields may be given particular attention, e.g., comprehensive health planning, family planning and population problems, health of the school age child, medical care administration, and community mental health.

Programs of study leading to the following academic degrees are administered by groups of faculty from the School of Public Health and other departments:

- Biostatistics, M.A., Ph.D.
- Comparative Pathology, M.S., Ph.D.
- Environmental Health Sciences, M.S., Ph.D.
- Epidemiology, M.S., Ph.D.
- Immunology, M.A., Ph.D.
- Microbiology, M.A., Ph.D.
- Nutrition, Ph.D.
- Parasitology, M.S., Ph.D.

Students are encouraged, and in most programs are required, to begin studies in the fall quarter because of the order in which courses are scheduled. Separate applications for admission must be submitted to the Graduate Division of the University and to the School of Public Health no later than March 1 for admission the following fall quarter.

For further information consult the ANNOUNCEMENT, School of Public Health, University of California, Berkeley, California 94720.

**GRADUATE SCHOOL OF PUBLIC POLICY**

The School offers two programs of graduate study. The professional degree, the Master of Public Policy, is designed to provide students with the knowledge, skills, and sensitivities required to conduct policy studies. The Ph.D. program is oriented toward the generation of new knowledge, theories, and methodologies for the analysis of public policy.

The two-year Master’s degree program consists of a first-year core curriculum, a summer internship, and a second year devoted largely to elective courses. The first-year core includes courses in political and organizational analysis, applications of economic analysis, decision analysis, modeling and quantitative approaches, and a workshop which provides opportunities to perform policy studies on selected policy issues. The primary focus is on analysis of American domestic policy.

Students from diverse disciplinary backgrounds are accepted into this program so long as they wish to prepare themselves to perform systematic work in
public policy. Graduates from the Master's degree program will be qualified to take positions with government agencies, foundations, research corporations, and in some cases, private agencies and corporations. Many will become analysts while others may take administrative positions in which they will initiate and utilize policy studies.

The Ph.D. program is primarily designed to prepare students for careers in policy research in academic institutions, research institutes, or with government agencies. The program is small and admission into it is highly selective. The educational program will include advanced methodological training, extensive research experience in one or more substantive policy areas chosen by the students, and theoretical work in the disciplines most directly related to the individual's central policy concerns.

Brochures and information on admission procedures and program content are available at the Graduate School of Public Policy, 2607 Hearst Avenue, Berkeley, California 94720.

SCHOOL OF SOCIAL WELFARE

The School of Social Welfare is a graduate professional school which offers:

1. A program of studies which leads to the degree of Doctor of Social Welfare and which prepares students for careers in teaching, research, policy development and administration in the field of social welfare and in the profession of social work. It is open to applicants who already have completed the master's degree in an accredited school of social work and who give evidence of intellectual and other qualifications essential to successful doctoral study.

2. A combined program of master's-doctoral studies which begins in the first graduate year, leads to both Master of Social Welfare and Doctor of Social Welfare degrees, and prepares for the same careers. Applicants must evidence ability successfully to complete doctoral study and must have undergraduate preparation as outlined below.

2. A two-year program of studies for the Master of Social Welfare degree in preparation for the professional practice of social work. Applicants must have completed the group major in social welfare in the College of Letters and Science, or an equivalent major, or undergraduate study in other social and behavioral sciences judged by the faculty as adequate preparation for graduate study in the School.

3. An advanced post-master's School Social Work Internship program which allows graduate social workers to qualify for the California Standard Designated Services Credential. This program may be completed in two quarters of full-time attendance or in three quarters of part-time attendance by special arrangement.

A program offered jointly by the School of Public Health and the School of Social Welfare provides persons with a master's degree in social work with a base for practice in staff, consultative, and administrative positions in health programs. Additional information about this program may be obtained by writing to the Public Health Social Work Program, School of Public Health.

Applications for admission to any of these programs should be submitted
as early as possible beginning in September and no later than March 1, for admission in the following academic year. Admission to the School is contingent on admission to graduate standing; for details see the booklet Admission to Graduate Study.

The Department of Social Welfare administers an undergraduate group major in social welfare in the College of Letters and Science.

For further information, consult the Announcement of the School of Social Welfare.

Special Summer Program for Teachers
(June 25–July 27, 1973)

The Summer Program, an in-service education program in several fields of specialization, is planned and administered by the School of Education in cooperation with other departments of the University. Each course offered carries nine quarter units, the equivalent of six semester units, and one course constitutes a full academic load. Credit earned may be applied toward California teaching credentials. Admission to the program is a separate and different procedure from admission to a regular quarter at the University. Fees for the five-week session in 1973 include a $10 application fee, a $143 tuition fee, and a $2 student union fee—a total of $155. Auditors or visitors are not allowed in the Summer Program classes. You may obtain information about courses offered and an application form by writing to the Summer Program Office, 1605 Tolman Hall, University of California, Berkeley, California 94720. The telephone number is (415) 642-0841.

Field Studies Program

The Field Studies Program is designed for students who wish to compliment their classroom work with firsthand experience in a variety of different settings. Sample placements include the A.S.U.C. Childcare Center, Berkeley Neighborhood Legal Services, St. George Homes, Freedom News, etc. The program emphasizes mutual rather than one-sided benefits by placing students where they are really needed as well as where they will receive an educational field experience. The field study is combined with a weekly seminar that attempts to combine the student’s experiences and the intellectual issues that arise from the field studies.

Schools and Colleges in San Francisco

If you plan to enter one of the University’s professional schools or the affiliated college in San Francisco, you may receive your required preprofessional training on the Berkeley campus.

For information regarding admission requirements, curricula, and costs, you should write to the dean of the school or college in which you are interested. Address the Dean, School of Dentistry, School of Medicine, School of Nursing, or School of Pharmacy, University of California, San Francisco, California
94122; or the Dean, Hastings College of the Law, 198 McAllister Street, San Francisco, California 94102.

Also affiliated with the University is the San Francisco Art Institute with undergraduate programs leading to the degree of Bachelor of Fine Arts or the Certificate of Completion. A program of study at the graduate level leads to the degree of Master of Fine Arts in painting, sculpture, and printmaking. Prospective entrants or transfers may obtain further information from the Registrar, San Francisco Art Institute, 800 Chestnut Street, San Francisco, California 94133.