# CORRESPONDENCE DIRECTORY

**UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA 94720**

<table>
<thead>
<tr>
<th>Department</th>
<th>Office/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions</td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>Office of Admissions 127 Sproul Hall</td>
</tr>
<tr>
<td>Graduate</td>
<td>Graduate Admissions 1 California Hall</td>
</tr>
<tr>
<td>School of Optometry</td>
<td>Office of the Dean 103 Optometry</td>
</tr>
<tr>
<td>Registration and General</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>Registrar's Office Window 3, Sproul Hall</td>
</tr>
<tr>
<td>Academic Matters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dean Individual college or school</td>
</tr>
<tr>
<td>Housing</td>
<td>Housing Services 2401 Bowditch Street</td>
</tr>
<tr>
<td>Residence Status</td>
<td>Attorney in Residence Matters 590 University Hall</td>
</tr>
<tr>
<td>Foreign Students' Problems</td>
<td>Foreign Student Adviser International House, Campus</td>
</tr>
<tr>
<td>Selective Service and Veterans</td>
<td>Supervisor of Special Services 2539 Channing Way</td>
</tr>
<tr>
<td>Affairs</td>
<td></td>
</tr>
<tr>
<td>Scholarships</td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>Committee on Undergraduate Scholarships 2539A Channing Way</td>
</tr>
<tr>
<td>Graduate</td>
<td>Graduate Division 1 California Hall</td>
</tr>
<tr>
<td>Fellowships</td>
<td>Graduate Division 1 California Hall</td>
</tr>
<tr>
<td>Prizes</td>
<td>Committee on Prizes 2543 Channing Way</td>
</tr>
<tr>
<td>Loans</td>
<td>Dean of Students 201 Sproul Hall</td>
</tr>
<tr>
<td>Employment</td>
<td>Student and Alumni Placement Center Building T-6</td>
</tr>
<tr>
<td>Student Activities</td>
<td>Executive Director, ASUC 207 Eshleman</td>
</tr>
<tr>
<td>University Extension</td>
<td>University Extension 2223 Fulton Street</td>
</tr>
<tr>
<td>Policy Matters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chancellor 200 California Hall</td>
</tr>
<tr>
<td></td>
<td>President 714 University Hall</td>
</tr>
</tbody>
</table>

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

**UNIVERSITY OF CALIFORNIA • BERKELEY VOLUME 64 NUMBER 8 MAY 15, 1970**

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

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:
All campuses observe the opening dates listed for the acceptance of undergraduate applications. The deadline for filing an application for admission will vary from campus to campus. Enrollment quotas limit the number of new freshman and new advanced standing students that may be admitted. Once these quotas have been filled, additional applications cannot be accepted and will be forwarded to another University campus where enrollments are still open. Opening dates apply to regular, limited, or special status including applicants for a second bachelor's degree or intercampus transfer.

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.

Quarter begins.

Subject A Requirement

Foreign Language Placement—Achievement Tests.

Late Registration begins. Fee $10.

Calendar, 1970-71

<table>
<thead>
<tr>
<th>Fall '70</th>
<th>Winter '71</th>
<th>Spring '71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1,</td>
<td>May 1,</td>
<td>Aug. 1,</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Friday</td>
<td>Saturday</td>
</tr>
<tr>
<td>May 15,</td>
<td>Oct. 10</td>
<td>Jan. 10,</td>
</tr>
<tr>
<td>Friday</td>
<td>Saturday</td>
<td>Sunday</td>
</tr>
<tr>
<td>June 15,</td>
<td>Nov. 10,</td>
<td>Feb. 5,</td>
</tr>
<tr>
<td>Monday</td>
<td>Tuesday</td>
<td>Friday</td>
</tr>
<tr>
<td>July 6–</td>
<td>Nov. 16–</td>
<td>Feb. 16–</td>
</tr>
<tr>
<td>Aug. 28,</td>
<td>Dec. 4–</td>
<td>March 5,</td>
</tr>
<tr>
<td>Monday–</td>
<td>Monday–</td>
<td>Monday–</td>
</tr>
<tr>
<td>Friday†</td>
<td>Friday†</td>
<td>Friday</td>
</tr>
<tr>
<td>July 6–</td>
<td>–</td>
<td>Dec. 1–</td>
</tr>
<tr>
<td>Aug. 21,</td>
<td>–</td>
<td>Dec. 30,</td>
</tr>
<tr>
<td>Monday–</td>
<td>–</td>
<td>Tuesday–</td>
</tr>
<tr>
<td>Friday†</td>
<td>–</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Sept. 4,</td>
<td>–</td>
<td>Feb. 1,</td>
</tr>
<tr>
<td>Friday</td>
<td>–</td>
<td>Monday</td>
</tr>
<tr>
<td>Sept. 7,</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Monday</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sept. 8,</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Tuesday</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>†</td>
<td>†</td>
<td>†</td>
</tr>
<tr>
<td>Sept. 25,</td>
<td>Jan. 4,</td>
<td>March 27,</td>
</tr>
<tr>
<td>Friday;</td>
<td>Monday</td>
<td>Saturday</td>
</tr>
<tr>
<td>Sept. 28,</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Monday</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sept. 28,</td>
<td>–</td>
<td>Feb. 12,</td>
</tr>
<tr>
<td>Monday</td>
<td>–</td>
<td>Friday</td>
</tr>
<tr>
<td>Sept. 28,</td>
<td>Jan. 4,</td>
<td>March 29,</td>
</tr>
<tr>
<td>Monday</td>
<td>–</td>
<td>Monday</td>
</tr>
<tr>
<td>Sept. 28,</td>
<td>Jan. 4,</td>
<td>March 29,</td>
</tr>
<tr>
<td>Monday</td>
<td>–</td>
<td>Monday</td>
</tr>
<tr>
<td>Sept. 29,</td>
<td>Jan. 4,</td>
<td>March 29,</td>
</tr>
<tr>
<td>Tuesday</td>
<td>–</td>
<td>Monday</td>
</tr>
</tbody>
</table>

* 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, applications and credentials should be forwarded to the Admissions Officer at the earliest possible date.
† Registration forms may be obtained beginning May 18 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 12.
‡ Except School of Law.
† Dates to be determined.
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 1970–71.

Instruction begins.§

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 1970–71: 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 the bachelor's or the doctor of optometry degrees to be conferred 1970–71. Fee thereafter, $3.

Final date for filing announcements.

Final date for filing applications in candidacy for all doctoral degrees to be conferred in 1970–71: Office of the Dean of the Graduate Division, 1 California Hall. All signatures required upon these applications must be obtained in advance.

Final dates 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.

Undergraduates:

Graduates:§

Final date for filing with committees in charge the final form of theses for master's degrees to be conferred in 1970–71.

Final date for filing dissertations with the Dean of the Graduate Division for all doctoral degrees to be conferred in 1970–71.

Academic and Administrative Holiday

Instruction ends.§

Final examinations in departments at Berkeley.§

Final date for filing applications for fellowships and graduate scholarships for 1971–72.

§ Except School of Law.
Final date for filing theses with the Dean of the Graduate Division for all master's degrees to be conferred in 1970-71.

Quarter ends.\

School of Law, instruction ends.

**Academic and Administrative Holiday**

School of Law, final examinations.

Final date for filing undergraduate scholarship applications for 1971-72 or any quarter thereof.

School of Law, term ends.

§ Except School of Law.

<table>
<thead>
<tr>
<th>Fall '70</th>
<th>Winter '71</th>
<th>Spring '71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 18, Friday</td>
<td>March 19, Friday</td>
<td>June 15, Tuesday</td>
</tr>
<tr>
<td>Dec. 19, Saturday</td>
<td>March 20, Saturday</td>
<td>June 15, Tuesday</td>
</tr>
<tr>
<td>Dec. 24, 25;</td>
<td>March 26, Friday</td>
<td>May 22, Saturday</td>
</tr>
<tr>
<td>Dec. 31,</td>
<td>Jan. 1, Thursday,</td>
<td></td>
</tr>
<tr>
<td>Jan. 11-15,</td>
<td>Jan. 12, Monday-</td>
<td>June 1-12, Monday-</td>
</tr>
<tr>
<td>Jan. 23,</td>
<td>Saturday</td>
<td>Saturday</td>
</tr>
<tr>
<td>Jan. 15, 1971,</td>
<td>June 12, Saturday</td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan. 23,</td>
<td>June 12, Saturday</td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"The central mission of the University of California is learning. Learning encompasses transfer of knowledge, but not indoctrination; respect for the past, but not idolatry; high concern with academic excellence, but not to the exclusion of the whole person.

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

With these words, President Charles J. Hitch reaffirmed the tradition of excellence in teaching and research that has guided the University of California for one hundred years. As the oldest of the nine campuses of the University, Berkeley has long been in the forefront of this search for truth, and it has often led the way in pioneering efforts on the edge of human knowledge. Since the first day of classes here in 1873, the Berkeley campus has stood for quality and imagination both in its classrooms and its laboratories and has often encouraged bold innovations within the framework of its time-tested traditions.

The University has come a long way since the Berkeley campus was opened in 1873. Beginning as a small institution with only two buildings and an enrollment of 167 men and 22 women, it has grown to nine campuses with more than 106,000 students, a large and distinguished faculty, and research stations throughout the state. Recently it has established Education Abroad centers in ten countries in Europe, South America, and the Far East.

The Berkeley campus itself has grown almost beyond recognition. From a small institution surrounded by farmlands, it has become a city within a city. Its 27,500 students, together with its large faculty and staff, would populate a city larger than Modesto. Instruction is offered in 86 undergraduate departments, in more than 5,000 courses. Like the
metropolis it is, the campus makes available a multiplicity of fields of study and diversity of opportunity and activity.

Berkeley is above all a place of learning, and although its size makes possible many methods and channels of learning, size also has its dangers. The campus must make special efforts to avoid regimentation in an impersonal atmosphere. It must be a human and humane structure, not a cold bureaucracy.

Student unrest of recent years has focused attention on the problems besetting students at a campus as large as Berkeley. Among the results of this unrest have been studies to make the University more responsive to the changing needs of its students. Although the American Council on Education ranked Berkeley at the top of the nation's universities for the quality of its graduate faculty, its graduate education, and its library, the campus has learned that a distinguished and much-honored faculty, a richness of research facilities, and a gifted student body are not necessarily enough. No institution can rest on its laurels. The people who shape a university must constantly invigorate its traditions and challenge its established ways if it is to continue to be a vital force in stimulating the talents and minds of the young. Through experiment and innovation, by keeping classes small and giving the student a greater chance for independent achievement in closer association with the faculty, the campus community is trying to overcome its problems. Only by so doing will it continue to preserve and encourage the spirit of free inquiry and dedication to truth that have made Berkeley one of the intellectual centers of the world.
## Contents

### INTRODUCTION

### SECTION ONE

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Undergraduate Admission to the University</td>
<td>15</td>
</tr>
<tr>
<td>II. Procedures and Regulations for Undergraduates</td>
<td>23</td>
</tr>
<tr>
<td>III. The Graduate Division</td>
<td>35</td>
</tr>
<tr>
<td>IV. Services and Facilities</td>
<td>57</td>
</tr>
<tr>
<td>V. Colleges and Schools</td>
<td>76</td>
</tr>
<tr>
<td>VI. Research at Berkeley</td>
<td>117</td>
</tr>
</tbody>
</table>

### SECTION TWO

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VII. Courses and Curricula</td>
<td>143</td>
</tr>
<tr>
<td>Officers of Administration</td>
<td>575</td>
</tr>
<tr>
<td>Map of the Campus</td>
<td>578</td>
</tr>
<tr>
<td>Index</td>
<td>581</td>
</tr>
</tbody>
</table>

Your assistance in conserving copies of this publication will be appreciated. The savings realized can be devoted more directly to educational purposes.
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: the San Francisco Medical Center in 1873; the Davis campus (initially the University Farm) in 1905; the Riverside campus (initially the Citrus Experiment Station) in 1907; the San Diego campus (initially the Scripps Institution of Oceanography at La Jolla) in 1912; the Los Angeles campus (UCLA, initially the Los Angeles State Normal School) in 1919; the Santa Barbara campus (initially Santa Barbara State College) in 1944; and the Santa Cruz and Irvine campuses 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. The widespread achievement and influence of the University is reflected in the vigor of California's economy, the well-being of its citizens, and the leading role of California in the nationwide advancement of learning and technology.

With such extensive and distinguished 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  From an enrollment of fewer than 200, students at the University of California now number 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 12% of their classes; to graduates of out-of-state high schools in the top 6% 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 eight 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.

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 3,600,000. 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 a rapid and intensive construction program, the campus retains the pleasant atmosphere of a park, 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.
SECTION ONE

General Information
I. Undergraduate Admission to the University

Following is a brief description of the standard procedures of being admitted to the University in undergraduate status. Once admitted, a student will be interested in the procedures of registration and various aspects of student life (covered in the next chapter). Complete details concerning admission are given in the UNDERGRADUATE ADMISSION CIRCULAR, available from the Office of Admissions and sent automatically to each applicant. Please remember that an individual college, school, or department may have additional requirements, such as qualifying examinations, certificates of certain courses completed, placement tests, or interviews. For such details, consult the appropriate sections of this catalogue or the individual Announcements published in booklet format by each school and college.

Undergraduate Admission Procedures

Filing The Application Application packets, containing all necessary forms and instructions are available from the Office of Admissions, 127 Sproul Hall. This office accepts completed applications on or after the opening dates for filing listed below:

- Fall Quarter 1970: October 1, 1969
- Winter Quarter 1971: May 1, 1970
- Spring Quarter 1971: August 1, 1970

New undergraduate admission requirements are uniform on all campuses of the University. Admission to the University of California entitles the student to attend the campus of his choice if facilities are available. Applications received in excess of campus limitations will be forwarded to an alternate campus and preferences indicated will be given careful consideration insofar as possible. It is important that each applicant file early after the appropriate opening date for acceptance of applications. An applicant should apply to only one campus since applications will be processed in one Office of Admissions only. Instructions for changing campus preference after the application is filed will be included with the application packet.

Application Fee An applicant must include with his completed application forms, a fee of $10 (not refundable). This fee may be submitted as check or money order payable to The Regents of the University of California.

Transcript of Record The applicant must also explicitly request his high school, and each college attended, to send the Office of Admissions an official transcript of his academic record, showing courses and grades. For applicants to freshman standing not yet graduated from high school, the transcript should include all work completed through the sixth semester (eleventh grade) and should list both
current and planned high school courses. For applicants to advanced standing, an official transcript from the graduating high school as well as transcripts from all colleges attended are required. The college transcript should show good standing or honorable withdrawal.

For all applicants, preliminary transcripts should show work in progress. Final transcripts, including an official statement of graduation or withdrawal, must be sent later. Transcripts submitted become property of the University and are not returned.

**Notification of Admission**  The length of time before notification may vary for each applicant, and delay should not cause concern.

Each student admitted receives a Statement of Intention to Register form, which he must complete and return with a nonrefundable fee of $50. If he registers in the quarter he applied for, this fee will be credited to the university registration fee.

**Reapplication**  Applicants who, because of ineligibility or change of plans, do not register, and who wish to attend the University in a later quarter, must then file a new application (with the $10 fee). This application will be considered anew according to admission requirements in effect and the space available on the campus.

**Subject A: English Composition**  Every undergraduate student must demonstrate an appropriate level of ability in English Composition. This requirement (Subject A) may be satisfied by:

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

OR 2. Achieving a score of 550 or above in the College Entrance Examination Board Achievement Test in English Composition.

OR 3. Completing an acceptable college-level course of 4 quarter units or 3 semester units in English Composition with a grade of C or better.

If the applicant does not meet the requirement by one of the above ways, he must enroll in the course in Subject A. Further details are available from high school counselors or from the Subject A Office, 216 Dwinelle Hall Annex. The Subject A requirement is discussed more fully in the next chapter.

**Medical Information**  See Chapter II, page 23.

**Freshman Admission Requirements for California Residents**

Every applicant to the University is required to present evidence of his aptitude for University work. This includes both a high quality of scholarship and a background in specified subjects believed essential to higher education. With few exceptions, the better an applicant's preparation, the better his chances of success in University work, and the greater his freedom in choosing a field of specialization.

The following are the general requirements which California residents must meet. Those who plan to prepare for a specific major or curriculum—for exam-
ple, chemistry, or engineering—are advised to investigate additional requirements as early as possible. These are set forth in brochures issued by individual departments, and in the Announcements of the colleges and schools.

Freshman admission requirements apply to those applicants who, have not taken any courses at a collegiate institution since graduation from high school. All others should familiarize themselves with the requirements for admission in advanced standing, described on page 19.

High School Graduation  An official statement of graduation from high school is required, and the high school must be determined by the University as acceptable.

Preparatory High School Subjects  In order to meet these subject requirements, the courses offered in satisfaction thereof must be included on the certified list submitted to the Director of Admissions of the University by the high school principal if the school is located in California. This list must be certified by the principal to the effect that the courses included thereon meet the requirements for admission to the University, and must have been approved by the Director of Admissions of the University. If the high school is not located in California, the Office of Admissions will determine whether or not the courses are equivalent. The following subjects are required (note that one unit of high school work normally implies a one-year course that meets five times a week):

(a) History, 1 unit (refers to United States History; may include one-half unit of civics or American government)
(b) English, 3 units (including composition, literature, and oral expression)
(c) Mathematics, 2 units (including such subjects 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 or business mathematics are not acceptable)
(d) Laboratory science, 1 unit (an eleventh or twelfth grade year-course, both semesters in the same subject field)
(e) Foreign language, 2 units (this must be in one language. Any foreign language with a written literature is acceptable; remember that a student’s major or curriculum may specify a language requirement, which he should try to satisfy while in high school).
(f) Advanced course, 1 to 2 units, consisting of at least one of the following: 
   Advanced mathematics, 1 unit in addition to the courses offered under the mathematics requirement.
   Foreign language, either an additional unit of the same language offered under the language requirement, or 2 units of a second foreign language.
   Science, 1 unit of chemistry or physics in addition to the course offered under the science requirement.
Additional electives (to complete, together with the above, a minimum total of 15 entrance units).

Grade-Point Average  At least a B average (3.0 on the University’s 4-point system) is required in the courses taken after the ninth grade that are used to meet the above requirements. * Grades in elective courses are not to be included in the grade-point average. A subject requirement is satisfied only by those courses for which a C or higher is received. In determining the B average, a grade of A in one course may be used to balance a C in another. Grades of D, E, or F may not be balanced by a higher grade.

* Except from schools that give only yearly grades, the University considers grades on a semester basis. Grades in accelerated or honors courses are counted at face value.
One must repeat a course in which a D, E, or F was received in order to receive credit for satisfaction of a subject requirement and may also repeat any course taken after the ninth grade in which a D, E, or F was received to improve scholarship. However, no more than one unit of repetition will be allowed and grades earned in such repetitions will not be counted higher than a C in determining the scholarship average.

**Examination Requirement** As a requirement for admission, all freshmen applicants (and advanced standing applicants who have earned less than 12 units of college credit subsequent to high school graduation) must submit scores from the following examinations of the College Entrance Examination Board taken no earlier than the last half of the junior year: (1) The Scholastic Aptitude Test (The verbal and mathematics scores submitted must be from the same sitting); (2) Three Achievement Tests, which must include: (a) English composition, (b) social studies or foreign language, (c) mathematics or science.

Applicants who are California residents and whose scholarship average in the required high school subjects is 3.00 to 3.09 inclusive must achieve a minimum total score of 2500 on the examinations. The test results of all applicants will be used for the purposes of counseling, guidance, and placement and, when possible, in satisfaction of the Subject A requirement.

The tests should be taken after completion of the first half of the eleventh grade. The verbal and mathematics scores on the Scholastic Aptitude Test must be from the same test session.

For arrangements to take the tests, see below.

**Admission by Examination Alone** An applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination alone. For admission of nonresident applicants by this method see page 19.

To qualify, the applicant who is ineligible for admission must take the examinations required of eligible applicants, but must achieve higher scores. The required minimum total score on the Scholastic Aptitude Test is 1100. On the three Achievement Tests the required minimum total score is 1650 for California residents with no score less than 500 on any one test. Nonresident applicants must have a total score of 1725 or higher. See page 19.

Applicants for the fall quarter are urged to take the required examinations as early as possible. Tests should be taken no later than January of the senior year.

Arrangements to take the tests should be made with the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton New Jersey 08540. The fees are to be paid to the Educational Testing Service. Scores will be regarded as official only if they are received by the Office of Admissions directly from the Educational Testing Service.
Test Dates                  Closing Dates
July 11, 1970               June 24, 1970
November 7, 1970 (S.A.T. only) October 21, 1970
December 5, 1970             November 18, 1970
January 9, 1971              December 23, 1970
March 6, 1971                February 17, 1971
April 17, 1971 (S.A.T. only) March 31, 1971
May 1, 1971 (Achievement Tests only) April 8, 1971
July 10, 1971                June 23, 1971

Subject or Grade Deficiencies In some cases, admission is possible with minor deficiencies in either subjects or grades. The authority for these allowances is vested in the Admissions Officers. Usually an applicant must demonstrate an unusual academic record or present exceptional recommendations.

Admission Requirements for Nonresident Freshmen

The University is currently obliged, because of limited facilities and expanding enrollment, to place some limitation on undergraduate enrollment of nonresidents of California. Of those eligible, only those of exceptional promise are selected. Thus, admission requirements for nonresidents differ from those for residents as follows:

The high school grade-point average must be 3.4 or higher.

Subject and examination requirements, as well as all other admission procedures, are the same as for California residents.

Those who seek to qualify by examination alone must present a score of 1100 on the Scholastic Aptitude Test and at least 1725 on all three Achievement Tests (not less than 500 on each).

For admission requirements for applicants from foreign countries, see page 21.

Admission in Advanced Standing for California Residents

Those who have registered since high school graduation at any collegiate institution, including junior colleges, summer school, or extension courses, must apply for admission in advanced standing. An applicant may not disregard his previous college record and apply as a freshman. However, an advanced standing applicant who has earned less than 12 units of college credit subsequent to high school graduation must satisfy the examination requirement for freshmen applicants described above. 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 of 56 acceptable semester units or 84 quarter units, with an average of 2.4 or better.
Subject deficiencies of not more than 2 units may be waived for those who present the 56 or more semester units (or 84 quarter units) and the 2.4 grade-point average mentioned above. Deficiencies in excess of 2 units must be satisfied. Any high school subject requirements must be satisfied by appropriate college course.

**Admission in Advanced Standing for Nonresidents** The admission requirements for nonresidents differ from those for residents in that the required grade-point average is 2.8 rather than 2.0. Admissions procedures and all other requirements are the same as for California residents described above.

**Entry Via Other Schools** As indicated above, the conditions for entry to the University may be met by establishing a good record at another collegiate institution. Applicants are encouraged to investigate the University-preparatory programs offered by the many fine junior colleges throughout California. The University grants full unit value for approved transfer courses completed with satisfactory grades at any of these schools, up to 70 semester units or 105 quarter credits. However, extension courses taken elsewhere than the University may not be acceptable. The decision regarding the applicability of such course work in satisfaction of degree requirements rests with the faculty of the particular school or college in which the student plans to enroll. For further information, consult the Office of Admissions.

**Intercampus Transfer** Those currently registered on any campus of the University in a regular session (or those previously registered who have not since registered at any other school) may apply for transfer to another campus by filing a form on their present campus—not on their proposed campus. This form must be obtained and filed at the Office of Admissions. The deadlines are the same as the admissions application deadlines given on page 2.

**Intercampus Visitor** Students enrolled on one campus who wish to visit another campus for one quarter only may apply for an Intercampus Visitor application at the Office of the Registrar on the campus where they are currently enrolled. After the quarter is completed, the visitors return to their home campus as continuing students. The deadlines are the same as the admissions application deadlines given on page 2.

**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**

Admission qualifications of a foreign applicant are evaluated in accordance with the general regulations governing admission. He should submit his application, with all official certificates and transcripts at the beginning of the appropriate filing period (given on page 2), to allow time for exchange of necessary correspondence and, if he is admitted, for obtaining the necessary visas.

**Engineering Students** A foreign applicant to the College of Engineering in freshman status must take the College Entrance Examination Board's Scholarship Aptitude Test, and three achievement tests: English composition, physics, and mathematics. Though he may be admitted to the University, a foreign applicant is not allowed to take courses in the College of Engineering without satisfactory scores on these examinations. To take these tests in his own country, an applicant should write to the Educational Testing Service. After the testing, he must request that his scores be forwarded to the Office of Admissions. A foreign applicant to the College of Engineering in advanced standing must take the Engineering Qualifying Examination. Arrangements to take this examination should be made with the Director of Admissions, University Hall, University of California, Berkeley, California 94720.

**Proficiency in English** An undergraduate student from a non-English-speaking country must demonstrate proficiency in English by an examination given by the University at the time of arrival in Berkeley. Failure to pass this examination will defer admission until the required proficiency is obtained. Applicants are urged to take the Test of English as a Foreign Language (TOEFL), administered
by Educational Testing Service. Scores from this test should be forwarded to
the Office of Admissions to help it evaluate the undergraduate applicant. For
information regarding English proficiency requirements for foreign graduate
students, see page 36.

Those whose language is other than English may receive college credit in
their own language and its literature only for: (1) courses completed in their
country at institutions of a college level; (2) upper division or graduate courses
taken at the University of California.

**Health Insurance** Those not on permanent resident (immigrant) visas are
charged for mandatory health insurance at the time of registration. Further
details about this insurance are given on page 67.

**Foreign Student Adviser** The primary objective of the Foreign Student Ad-
viser is to aid the foreign student in his pursuit of a successful educational
experience. The foreign student is urged to come to the Foreign Student Ad-
viser's Office, located in International House, upon arrival in Berkeley and
whenever questions arise. The Foreign Student Adviser will provide assistance
in problems concerning finances, visas, passports, work permits, transfer of funds
from abroad, and local and national regulations affecting foreign students.
II. Procedures and Regulations for Undergraduates

For both new and continuing students, the first few weeks of the quarter carry the greatest number of problems. This chapter is an outline of the procedures encountered by most students in registering in the University, enrolling in courses, and completing work toward the degree. The sooner a student familiarizes himself with these details, the easier it will be for him to handle them smoothly and efficiently.

Registration and Enrollment

Registration Procedures Registration is the means by which one officially becomes a student at the University. It includes the payment of registration and other fees (described in a later chapter), and the completion and filing of informational forms for various purposes. This is done by mail. New and reentering 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 $10.

Late registration also increases a student's difficulties in obtaining a suitable program of classes. He may not plead lateness as an excuse for neglecting assigned classwork—for which he is held accountable from the first day of classes. A student's name is not entered on class rolls unless he completes registration according to the regulations. No student may register after the second week of classes.

Medical-Physical Examination Requirements Students who are new to the Berkeley campus and those students reentering after an absence of more than five years are required to have a medical examination. Students who have been accepted for admission are mailed medical examination appointments within the month prior to the opening of the new quarter. Appointments are not mailed to addresses outside the United States. Students who do not receive an appointment by the opening date of the quarter are advised to obtain one immediately at Window 104, Cowell Memorial Hospital. Medical examinations at the Health Service are given only during the first week of the fall quarter; for subsequent quarters, the examinations are held on the second Saturday following the beginning date of the quarter. The fee for failure to keep appointment is $10.

Students returning to the University after an absence of five years or less are required to report to Cowell Memorial Hospital, window 104, to complete a supplementary medical history form, tuberculosis screening and, in some instances, may be required to have a physical examination if indicated by their Student Health Service record.

Reduced fee program students (new and reentering only) are not required to complete a medical examination, but must report to Cowell Hospital, Window 104, for tuberculosis screening and smallpox vaccination clearance.
Tests for tuberculosis are a part of the examination and evaluation of all new and reentering students.

New students are required to have a smallpox vaccination within the past three years. Students should have the vaccination before coming to the campus. A charge will be made for vaccinations given at Cowell Hospital to complete the entrance requirement. International certificates, Armed Services immunization records, Public Health Department certificates and statements by private physicians are acceptable in lieu of the University form.

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

Physical Education Orientation Meeting  Undergraduates registering for the first time are invited to attend this meeting conducted by the Department of Physical Education. Its purpose is to acquaint students with all course, intramural, intercollegiate, and recreational opportunities in sports and dance.

Nonresident Tuition Fee  Students who have not been bona fide residents of California for more than one year immediately prior to the opening day of the quarter in which they register are charged, along with other fees, a tuition fee of $400 for the quarter. Legal residence (Government Code Section 244 and Education Code Sections 23054–23059 and the Standing Orders of the Regents) is the combination of physical presence and the intention of making the state one’s permanent home. New and returning students are required to fill out a Statement of Legal Residence, a form that is issued upon registration. Their status is determined by the Attorney in Residence Matters, 590 University Hall, University of California, Berkeley 94720, or by his deputy in the Registrar’s Office. All correspondence should be addressed to the Attorney, as he has the sole authority to determine residence classification.

The attention of the following students is directed to the fact that presence in California for more than one year does not, in itself, entitle them to resident classification: (1) those under 22, whose parents are not California residents; (2) veterans who were not California residents at the time of entry into the Armed Forces; (3) alien students who must first qualify for permanent residence status according to the applicable laws of the United States. Exemption from payment of the tuition fee may be granted to the unmarried minor whose parent is in the active military service of the United States and is stationed in California on the opening day of the quarter for which the minor registers or is stationed outside the United States immediately after having been stationed on active duty in California. This waiver is also available to the spouse of a member of the military service of the United States with an active duty station as described above.

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

Part of the fees may be refunded to students who withdraw before the end of
any quarter. A separate circular, **Student Fees and Deposits**, gives information on refunds. This circular is available from the Registrar.

**Conference with Faculty Adviser**  A normal procedure for every University student is to confer with an adviser and obtain approval of a tentative program. The adviser will help the student make long-range plans for a major, and to prepare for graduate or professional study. He will discuss with the student the requirements of the University, his college or school, and his department. Students should see their advisers as early as possible in the established office hours during the period prior to the opening of classes. A student is strongly advised to go prepared: he should have at least a tentative idea of the courses he wishes to take, and should try to acquaint himself beforehand with course requirements.

**Enrollment in Classes**  A student 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 his adviser and the **General Catalogue**, which provides course descriptions and prerequisites, the student may assemble his program. He 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. He should try to construct two or three alternative programs, in case he is not admitted to the courses of his choice. Some courses are especially popular, and therefore difficult to enroll in.

Most courses merely require the student to attend the first class meeting, submit a prepunched enrollment card, received at the time of registration, and obtain a prepunched class card which is filed with the study list (see below). Unless subsequent enrollment problems occur, and provided that the student satisfies the instructor’s prerequisites for admission, he is normally admitted.

Courses with restricted enrollment, or those likely to have an excessive number of applicants, have special advance enrollment procedures, which are described in detail on placards posted on campus bulletin boards at the end of the preceding quarter, and in the **Schedule and Directory**.

**Filing the Study List**  In order to complete his enrollment and receive credit for the work of a quarter, a student must file his study list at a time and place designated by the Registrar’s Office. The study list must carry the approval of the student’s adviser, although there may be exceptions in the College of Letters and Science, and (if his program is an exception to the normal unit load prescribed by his college or school) by the dean. Some colleges and schools require their dean’s signature as a normal part of the study-list procedure. Filing dates are assigned according to the student’s last name. The study-list form is included in the packet issued to the student upon registration, along with instructions for completing and filing it. The study list represents the student’s final choice of courses, and constitutes his commitment to undertake the work of each course. Unapproved withdrawal from, or neglect of, a course entered on the list could result in disciplinary action. Any changes of program after filing the study list—whether to add, replace, or drop a course—must be made by
formal petition with the signed approval of the instructor involved and the dean of the college or school. There is a fee of $10 for filing the study list after the assigned date. No study list is accepted after the third week of instruction.

Quarter Procedures

The Quarter System The 1970-71 school year will consist of three ten-week quarters and two six-week summer sessions. There will be no summer quarter in 1970. A student making normal progress toward the bachelor's degree attends three quarters per school year.

A student who completes the fall quarter, does not apply for an honorable dismissal or leave of absence, and is eligible to continue in the same status, may remain out of school for the winter quarter and resume his studies in the spring without submitting a formal application for readmission. A student who is eligible to continue his studies into the fall or spring quarters, but who does not do so and remains absent from school must apply for readmission in order to resume his studies.

Courses and Units All University courses (except Subject A and certain other 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.

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.

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 units 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.

**Probation**

Except in the Colleges of Chemistry and Engineering, a student is placed on probation if his overall average falls below 2.0 at the end of any quarter. He will be removed from probation if he achieves the requisite 2.0 overall average by the end of the next quarter of attendance.

**Dismissal**

College of Chemistry and College of Engineering: a student is subject to dismissal if he falls below a 2.0 average, both for all work undertaken and for the work of each quarter.

College of Agricultural Sciences, College of Letters and Science, and School of Business Administration: a student is subject to dismissal (1) if his grade-point average for the work of any quarter falls below 1.5; (2) if while on probation his grade-point average for the work undertaken in any quarter falls below 2.0; (3) if after two quarters of probationary status he has not made up his entire grade-point deficit.

All other colleges and schools: a student is subject to dismissal (1) if his grade-point average for the work of any quarter falls below 1.5; (2) if after one quarter of probationary status he has not made up his entire grade-point deficit.

A dismissed student may appeal, by formal petition to the dean of his college.
or school, for a hearing, but the action of dismissal is normally considered final. A dismissed 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. Students with an overall grade-point average of 3.5 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 following exceptions:

At the beginning of the quarters, the SCHEDULE AND DIRECTORY lists some courses as not requiring a final examination. These are laboratory, honors or special study courses.

If a student who is to be graduated at the end of the quarter is being examined in the field of his major by his department, he may, at the department’s discretion, be excused from final examinations in all courses taken within the department.

Year courses in the School of Law may, at the end of each term, require an instructor’s progress report in lieu of a final examination.

Final examinations are normally in written form; they may or may not, at the instructor’s discretion, cover the entire course. Students may wish to inspect a file of sample examinations, listed by course, in the Reserve Book Room of the Library. Examinations in nonlaboratory courses may not exceed three hours. Any infringement by the student of rules of fair examination practice is considered a serious offense subject to discipline.

Reexaminations are permitted only for the purpose of raising 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 reentering 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. 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.** Effective with the fall quarter 1968, a student's level of performance must correspond to letter grade C- or better if a passed grade is to be assigned.

An undergraduate may enroll in one course each quarter on a passed or not passed basis, either a course offered by the department solely on this basis or a course elected by the student. He must be in good standing (i.e., have at least a C average in all courses taken at the University). A course which is required in the student's major or is prerequisite to the major may be taken on a passed or not passed basis only upon the approval of the faculty of his college or school. If the student is enrolled in Supervised Independent Study and Research (courses numbered 199), and that study is subdivided into portions under the supervision of separate instructors or in separate departments, the portions may separately be graded passed or not passed without this constituting a violation of the limitation of one course per quarter. Additional rules concerning enrollment in 199 courses will be found on page 143 of this catalogue.

The student may not enroll in further courses on a passed or not passed basis if he has twice failed to pass such courses.

An exception to these rules is permitted in that any student, graduate or undergraduate, whether in good standing or not, may elect in addition each term not more than one unit of half-unit “activities” courses in physical education and not more than one unit in half-unit Music 400-series “practice” courses. After a student has received a grade of not passed in two of these courses, he may not enroll in another half-unit course on a passed or not passed basis in the same department. The results of these courses are disregarded in ascertaining a student's eligibility to undertake courses on a passed or not passed basis in courses of other departments and vice versa.

Any further exceptions require the approval of the dean of his school or college. The adviser or the dean should be consulted before a study listed is filed for such limitations and additional regulations that are applicable to the student.

**Student Conduct and Discipline** A student enrolling in the University assumes an obligation to conduct himself in a manner compatible with the University's function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities, and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of the Dean of Students, 201 Sproul Hall, and at the Information Desk in the Student Union. 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.

**Absences and Withdrawals** Responsibility for short absences is largely left up to the student. For absences of five days or longer, the student must apply to the Dean of Students for a Leave of Absence.
Permission to withdraw entirely from the University, without scholarship penalty, is not usually granted after the first few weeks of the quarter, except under unusual circumstances over which a student has no control. If circumstances prevent further class attendance, a student should notify the Registrar in writing immediately. Upon written approval of the Dean of Students and also the dean of the college or school, honorable dismissal will be granted. One may also obtain, upon petition, honorable dismissal at the close of any quarter. Any withdrawal for reasons of health requires the endorsement of the Director of the Health Service, following review by the medical staff or the student's private physician. One may not, under any circumstances, discontinue schoolwork without formal notice—this may result in dismissal and loss of eligibility for readmission.

Reentry after an Absence  A student who has been dismissed because of scholarship deficiency or disciplinary problems is generally not eligible for readmission. A student who completes a quarter, does not apply for an honorable dismissal or leave of absence and is eligible to continue in the same status, may remain out of school for the winter quarter that follows directly and register for the spring quarter without the need of applying for readmission. The winter quarter is the only quarter that may be omitted in this manner. A student who does withdraw, or who is absent for any quarter other than the winter quarter, must file an Application for Readmission, which may be obtained from the Office of the Registrar. A nontransferable, nonrefundable Readmission Fee of ten dollars ($10) was established effective with the spring quarter 1969. This fee must accompany the Application for Readmission when first submitted; the application cannot be considered until the fee has been paid.

Declaration and Change of Major  Regulations and procedures for declaring the major vary for each college. A student may, at any time up to the last quarter of residence, file a petition for a change of major. He must secure approval for this action from the dean or other authorized person in the college or department to which he is transferring.

Work Toward a Degree  At the close of each quarter, the courses, units, grades, and grade-points earned are added onto the student's cumulative University record. From this record, he may determine his progress toward a degree. 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, may not be available for 10 to 15 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 from three to four working days. The charge for each transcript of every undergraduate, graduate or separate summer session record is $1, and the total amount due must accompany the application.

In working toward a degree, the student should keep in mind the various levels on which he is to satisfy requirements—University, college or school, and
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. These are considered essential to the student’s education, regardless of his 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 course 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 course in Subject A during his first term of residence at the University. This is a noncredit 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.

**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 government of his country. These requirements may be met in the following six ways:

1. By passing two examinations, one in each of these subjects. All students who wish to take either or both examinations should obtain details at the American History and Institutions Office, Room 204, Bldg. T-9.

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):


   (2) **Institutions Requirement:** Political Science 1, 5, 33A, 33B, 33C, 110, 112, 113A, 113B, 157A, 157B, 157C; History 33A, 33B, 33C; English 33A, 33B, 33C. The normal course to satisfy this requirement for those other than Political Science majors will be Political Science 5.

4. By mixing alternatives 1, 2, or 3 for either requirement. A student 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. 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 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.
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, in addition to University admission requirements stated in the previous chapter; (2) preparatory college-level courses for the student's particular field of study—to be completed, if possible, during the student's early period of residency in the college or school, or in some cases before entrance; (3) breadth requirements, that is, 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. The degree programs and general requirements of the colleges and schools are briefly summarized in Chapter V. Detailed information is given in the individual Announcements of the colleges and schools.

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.

All courses, as well as all majors administered under a single department, are listed by department in the course section of this catalogue.
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 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. For a list of graduate degrees offered, see page 54.

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 $10, must be filed with the Graduate Admission/Fellowship Office by the established deadlines.

The final dates for acceptance of applications for admission for the 1970–71 academic year are: fall quarter, May 15; winter quarter, October 10; and spring quarter, January 10. The School of Law admits only for the fall term; the deadline is May 1.

A number of departments with heavy enrollments have established earlier final dates of their own, both with respect to admission and to financial assistance. Consequently, it is to a student’s advantage to make early inquiry about application for study at Berkeley.

Admission Requirements

The University requires of the applicant the following: (1) a valid degree from an accredited institution, comparable to the bachelor’s degree offered at Berkeley; (2) sufficient undergraduate training to undertake graduate study in his chosen field; and (3) a satisfactory scholastic average. Since the methods of determining eligibility vary with each applicant, an extensive evaluation of his college records and supporting materials 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, is recommended, and further, 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.

In addition to the general University requirements, certain schools or departments 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 Section II (Courses and Curricula) of this catalogue.

Notification of Admission Only a written notice from the Dean of the Graduate Division, not letters from departments or faculty, is valid proof of admission. Notification is sent to the applicant after his records and supporting materials have been reviewed by both the Graduate Admission/Fellowship Office and the departmental selection committee. Normally this is four to six weeks after all the records and materials for the applicant's admission file have been received. It can take longer, however, depending upon the time of year and the meeting schedule of the selection committees.

Reapplication An applicant who changes his plans and withdraws his application from consideration for a particular quarter will have all of his materials 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 Admission/Fellowship Office to reactivate his file prior to the application deadline date for that quarter and by providing a current application, if required, together with any records of academic work completed since he first applied. For application after the two-year limit, he will have to file a new application form (with the $10 fee) and supply a new set of records and supporting materials.

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 either the Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service, or the test given by the American consular authorities abroad. 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 year from early August to mid-September. 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. The University of California has always welcomed postdoctoral fellows and visiting scholars. A prospective fellow or scholar should communicate in advance of his arrival on campus 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. Such appointments are subject to the final approval of the Dean of the Graduate Division.
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 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.

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 there 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. All graduate students must confer with their graduate advisers at the opening of each quarter and obtain approval of their programs of study.

Foreign Student Adviser  Foreign students must consult with the Foreign Student Adviser at International House as soon as possible after arrival in Berkeley. Please refer to section on Foreign Student Adviser, page 22.

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

If a student's studies or research require him to remain outside the State of California for the quarter, he must file a petition for this, including a request for reduction of the incidental fee, with the Office of the Dean of the Graduate Division.

Student Conduct and Discipline  A student enrolling in the University assumes an obligation to conduct himself in a manner compatible with the University's function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities, and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of the Dean of Students, 201 Sproul Hall, and at the Information Desk in the Student Union. 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.

Leave of Absence and Withdrawal  If a student wishes to withdraw from the University, or if he finds it necessary to discontinue his studies before the close of the quarter, he must apply for a leave of absence. Petitions for this purpose are available from the Office of the Dean of the Graduate Division, and are filed with

* See the next chapter.
the same office. During his 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 or place demands on faculty time.

Readmission A student who is absent for one quarter, must file an Application for Readmission, which may be obtained from the Office of the Registrar, and must pay a nontransferable, nonrefundable Readmission Fee of ten dollars ($10). This fee, which became effective with the spring quarter 1969, must accompany the Application for Readmission when first submitted; the application cannot be considered until the fee has been paid.

Any leave of absence is a privilege requiring the endorsement of the student’s department or school and the Dean of the Graduate Division. Students who plan to leave the campus permanently should apply for honorable dismissal.

Medical-Physical Examination Requirements Students who are new to the Berkeley campus and those students reentering after an absence of more than five years are required to have a medical examination. Students who have been accepted for admission are mailed medical examination appointments within the month prior to the opening of the new quarter. Appointments, however, are not mailed to addresses outside the United States. Students who do not receive an appointment by the opening date of the quarter are advised to obtain one immediately at Window 104, Cowell Memorial Hospital. Medical examinations at the Health Service are given only during the first week of the fall quarter; for subsequent quarters, the examinations are held on the second Saturday following the beginning date of the quarter. The fee for failure to keep an appointment is $10.

Students reentering the University after an absence of five years or less must report to Window 104, Cowell Memorial Hospital to complete a supplementary medical history form, tuberculosis screening and, in some instances, may be required to have a physical examination if indicated by their Student Health Service Record.

Summer session students who are subsequently admitted to a fall, winter, or spring quarter must have a physical examination prior to the opening of that first quarter of regular attendance.

Reduced fee program students* (new and reentering only) are not required to complete a medical examination, but must report to Cowell Hospital, Window 104, for tuberculosis screening and smallpox vaccination clearance.

Tests for tuberculosis are a part of the examination and evaluation of all new and reentering students.

A smallpox vaccination within the past three years is required of new students, and should be obtained before they come to the campus. A charge will be made for vaccinations given at Cowell Hospital to complete the entrance requirement. International Certificates, Armed Services immunization records, Public Health Department certificates and statements by private physicians are acceptable in lieu of the University form.

* 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.
Registration at the University may be invalid without completion of medical examination or evaluation requirements.

All students who have paid the registration fee are eligible for health service from the first day of the quarter in which they register to the last day of the quarter, or to the date of official withdrawal if they withdraw prior to the end of a quarter.

**California Legal Residence** California state laws define legal residence as physical presence in the state with the intention of remaining indefinitely. To be considered for classification as a legal resident, a graduate student must meet this condition for at least one year immediately preceding the quarter in which he registers. Nonresidents must pay a nonresident tuition fee for each quarter. Those in doubt about their status should consult the deputy in charge of residence matters in the Office of the Registrar, or write: Attorney for The Regents in Residence Matters, 590 University Hall, University of California, Berkeley, California 94720. Only U. S. citizens and persons on immigrant visas can qualify for legal residence in the State.

**Academic Residence** In order to meet the academic residence requirement for higher degrees—not to be confused with state residence, defined above—every graduate student must enroll in and complete a minimum of 4 units of upper division and/or graduate courses per quarter (courses in the 100 or 200 series).

**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 43.)

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 faculty adviser and dean. For the convenience of students, a table of maximum programs is given on next page.

**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.
### Maximum Program

<table>
<thead>
<tr>
<th>Graduate units</th>
<th>Upper Division units</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>12</td>
</tr>
</tbody>
</table>

### Maximum Program for Teaching Assistants and Research Assistants

<table>
<thead>
<tr>
<th>Graduate units</th>
<th>Upper Division units</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

### Maximum Program for Persons Employed Full Time

<table>
<thead>
<tr>
<th>Graduate units</th>
<th>Upper Division units</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

#### 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 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 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 as part of the program for an academic degree.
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.

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  No courses taken in University Extension may be applied toward a higher degree administered by the Graduate Division at Berkeley. Requirements for the Standard Teaching Credential may be met in part, however, by courses offered in University Extension. (See the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION.)

The Master’s Degree  Instruction is offered on the Berkeley campus leading to the following master’s degrees:

<table>
<thead>
<tr>
<th>Academic</th>
<th>Professional Master’s Degrees in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Arts (M.A.)</td>
<td>Architecture (M. Arch.)</td>
</tr>
<tr>
<td>Master of Science (M.S.)</td>
<td>Bioradiology (M. Biorad.)</td>
</tr>
<tr>
<td>Master of Fine Arts (M.F.A.)</td>
<td>Business Administration (M.B.A.)</td>
</tr>
<tr>
<td></td>
<td>City Planning (M.C.P.)</td>
</tr>
<tr>
<td></td>
<td>Criminology (M.Crim.)</td>
</tr>
<tr>
<td></td>
<td>Engineering (M. Eng.)</td>
</tr>
<tr>
<td></td>
<td>Forestry (M. F.)</td>
</tr>
<tr>
<td></td>
<td>Journalism (M.J.)</td>
</tr>
<tr>
<td></td>
<td>Landscape Architecture (M.L.A.)</td>
</tr>
<tr>
<td></td>
<td>Law (LL. M.)†</td>
</tr>
<tr>
<td></td>
<td>Library Science (M.L.S.)</td>
</tr>
<tr>
<td></td>
<td>Public Health (M.P.H.)</td>
</tr>
<tr>
<td></td>
<td>Social Welfare (M.S.W.)</td>
</tr>
</tbody>
</table>

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.

Preparation  Normally a bachelor’s degree comparable to that offered at the University of California—with an undergraduate major either in the field of graduate study or a closely related field—is considered as acceptable preliminary training for study toward a master’s degree. The applicant’s undergraduate program of study must be approved as a sufficient foundation for advanced work by the graduate adviser in the student’s proposed field of study. The applicant’s scholastic record must also be of acceptable standard.

† Application for admission is made both to the Graduate Division and the School of Law.
Residence Requirement A minimum of three quarters of academic residence (as defined earlier under Academic Residence) is required for the master's degree. 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, upon 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 student's entire record must indicate superior scholarship.

Course Credit by Examination A student in residence may 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. Approval to take such examinations must be given by the Dean of the Graduate Division and by the instructor, or, where no instructor is designated, by the departmental chairman.

Standard of Scholarship Every graduate student must maintain a minimum grade-point average of B (3.0) for all work undertaken in graduate status. Only courses graded A, B, C (with or without affixes), or P are accepted in satisfaction of degree requirements. No more than 9 units graded Pass may be used as part of the unit requirement for the master's degree and then only if approved by the department. Courses graded below C– do not yield unit credit toward a higher degree irrespective of the overall grade-point average.

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) are 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, individual study and research, or other individual graduate work undertaken by a graduate student, may be evaluated by means of the grades satisfactory and unsatisfactory (S and U). Such courses are numbered in the "600 series" and do not count toward academic residence or the unit requirement for a higher degree. No credit will be allowed for work graded unsatisfactory.

Disqualification on grounds of poor scholarship is at the discretion of the Dean of the Graduate Division.

Amount and Distribution of Work Students working for academic master's degrees 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):

* 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.

† For further information on grades and grade points see Chapter II.
Plan I requires 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 36 quarter units of upper division and graduate courses, followed 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 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 1¾". 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. Wherever possible, one member of the committee is 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, normally 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 the following doctor’s degrees:

- **Academic**
  - Doctor of Philosophy (Ph.D.)
  - Criminology (D. Crim.)
  - Education (Ed. D.)
- **Professional**
  - Engineering (D. Eng.)
  - Law (J.S.D., J.D.)
  - Library Science (D.L.S.)
  - Public Health (Dr. P.H.)
  - Social Welfare (D.S.W.)

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.

**Preparation**

A prospective candidate for a doctor’s degree must possess a bachelor’s degree from the University of California, or an equivalent degree from an institution of comparable standing, with sufficient undergraduate preparation for advanced work in his proposed field, as determined by the department of his choice. The study of foreign languages should also be a strong part of undergraduate preparation for Ph.D. degree study.

**Residence Requirement**

As defined earlier, minimum residence of two years, or six quarters, is required for the Ph.D., although most candidates actually spend closer to four years.

**Program of Study**

The candidate’s program of study must be approved by the Graduate Council. It must embrace a field of study previously approved by the department(s) or group concerned, and it must extend over a period of at least two years. Many of the doctoral programs require more than two years of study; in any case, it is the candidate’s performance rather than his length of study that leads to recommendation for the degree. Normally the last year must be spent in continuous residence.

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

---

*The Juris Doctor degree (J.D.) has replaced the previously offered LL.B. as the basic degree in Law. Since it is a graduate degree, application for admission is made both to the Graduate Division and the School of Law.*
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 department 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 Darrell A. Amyx, *Chairman*
238 Kroeber Hall

**Group in Asian Studies**
2538 Channing Way

**Group in Atmospheric and Space Sciences**
Professor John H. Reynolds, *Chairman*
117 Birge Hall

**Group in Biostatistics**
Professor Jacob Yerushalmy, *Chairman*
306 Earl Warren Hall

**Group in Biophysics, Bioradiology, and Medical Physics**
Professor Howard Mel, *Chairman*
363 Donner Laboratory

**Group in Comparative Biochemistry**
Professor M. A. Joslyn, *Chairman*
313 Hilgard Hall

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

**Group in Endocrinology**
Professor Howard A. Bern, *Chairman*
4079 Life Sciences Building

**Group in Environmental Health Sciences**
Professor Bernard D. Tebbens, *Chairman*
19 Earl Warren Hall

**Group in Epidemiology**
Professor Warren Winkelstein, Jr., *Chairman*
19 Earl Warren Hall

**Group in Folklore**
Professor William R. Bascom, *Chairman*
103 Kroeber Hall

**Group in Food Science**
Professor M. A. Joslyn, *Chairman*
313 Hilgard Hall

**Group in Genetics**
Professor Everett R. Dempster, *Chairman*
345 Mulford Hall

**Group in Immunology**
Professor Sanford S. Elberg, *Chairman*
3510 Life Sciences Building

**Sponsoring Committee for Latin American Studies**
Professor Woodrow W. Borah, *Director*
3229 Dwinelle Hall

**Group in Logic and the Methodology of Science**
Professor J. Frits Staal, *Chairman*
303A Moses Hall

**Committee on Medieval Studies**
Professor Richard L. Crocker, *Chairman*
5310 Dwinelle Hall

**Group in Microbiology**
Professor H. J. Phaff, Davis, *Chairman*
Professor Michael Doudoroff, *Graduate Adviser*
5559 Life Sciences Building
To allow the student an approach to his field that, in its breadth, falls between those 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 work out a course of study in two departments that will lead to a degree in one of them, with, of course, the guidance and approval of both departments. 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 presently 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. There is sufficient flexibility to this requirement to enable each department or group to adapt it to the needs of the individual candidate. Before advancement to candidacy, and preferably before admission to the Qualifying Examinations (see below), the student must satisfy one of the following options, as determined by his department or group:

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

Departments will periodically review their procedures for fulfillment of the language requirement and make appropriate recommendations to the Dean of the Graduate Division. Changes in departmental procedure should be brought to his attention; specification of requirements lower than or markedly different from those established here can be accomplished at the discretion of the Graduate Council on petition by departments.

The Dean will periodically review the administration of the language requirement to determine whether the standards set by the Graduate Council are being maintained and report his recommendations to the Council.

The above constitutes the general foreign language requirement for the Ph.D. degree; the student's department(s) may require knowledge of more than two languages (some departments currently require as many as five). The prospective graduate student is strongly urged to begin his language preparation in his undergraduate years. Noncredit courses for graduate students are offered by the various language departments to prepare candidates for reading examinations.

**Notice of Intended Candidacy** Notice of his intention to proceed to candidacy for the Ph.D. degree should be given by the student to his department or group 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, fulfilled the foreign language requirement, and maintained better than a B average in all course work undertaken in graduate status.

**Advancement to Candidacy** Application is made on a form furnished by the Graduate Division. 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 before the application is filed.

**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>Economics</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>Education</td>
<td>Genetics</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>Electrical Engineering</td>
<td>Geography</td>
</tr>
<tr>
<td>Botany</td>
<td>Endocrinology</td>
<td>German</td>
</tr>
<tr>
<td>Comparative Literature</td>
<td>English</td>
<td>Immunology</td>
</tr>
</tbody>
</table>
Doctoral Dissertation  The format of the Ph.D. 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, must be submitted to the committee in charge (see below), and must receive both its approval and the approval of the Graduate Council. The dissertation is one of the most important requirements for the Ph.D. 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, one copy (the original, if typewritten) is filed with the Dean of the Graduate Division on a date specified by that office. Along with the dissertation, an abstract of it not to exceed 600 words, with a copy signed by the dissertation chairman, is also filed with the Graduate Division for publication in Dissertation Abstracts.

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. Departmental choice of doctoral Plans A and B is fixed as listed below.

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 twenty-eight languages taught at the Defense Language Institute at the Presidio of Monterey.
For additional information, the campus Language Training Adviser may be consulted. 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 Graduate Admission/Fellowship Office of the Graduate Division.

**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. Further information, a catalogue, and application forms may be obtained through the office of the Graduate Theological Union, 2465 LeConte, Berkeley, California 94709.

Joint Doctoral Programs Special Education—A joint doctoral program in special education leading to either the Ph.D. degree or the Ed.D. degree is offered by the University at Berkeley and San Francisco State College. The program is interdisciplinary, including clinical experience as well as preparation in depth in the behavioral sciences and in statistics and research methods. For application material and additional information, write to: Dean, School of Education, University of California, Berkeley, California 94720, or to the Department of Education, San Francisco State College, 1600 Holloway Avenue, San Francisco, California 94132. Genetics—A joint doctoral program in genetics leading to the Ph.D. degree is offered by the University at Berkeley and San Diego State College. For application material and additional information, write to: Professor James W. Fristrom, Department of Genetics, 345 Mulford Hall, University of California, Berkeley, California 94720.

University support for these programs is reflected in the continuing concern shown by the Coordinating Committee on Graduate Affairs for their quality and in the constant review by various agencies of the University of the guidelines established for the approval of future programs. The importance of these programs for State College students, many of whom live in the state’s larger urban areas, and their place in the state government’s overall plan for the support of doctoral education have received special—and positive—attention in these considerations.

Study Abroad for Graduate Students

Education Abroad Program Graduate students who have been admitted for study toward a higher degree may also study or pursue research at the University’s Education Abroad Centers. An applicant must have completed at least one year in residence at Berkeley before applying, must demonstrate the language proficiency required of participants in the Education Abroad Program, and must secure the approval of his Graduate Adviser, his Departmental Chairman, the Graduate Dean, and the Campus Director for International Education. If the student desires that the unit credit earned at a center be counted toward his graduate program, he must, after his return to Berkeley and with departmental support, petition the Dean of the Graduate Division to present his request to the Administrative Committee of the Graduate Council. For additional information and application materials, write to: Office of International Education, Room 104-A, Building D, 2538 Channing Way, Berkeley, California 94720. It should be pointed out that in some cases graduate students may find that the informal support and assistance of the staff at Education Abroad Centers may serve their needs better than regular participation in the Program. Interested students are urged to consult with their academic adviser.
Professional International Education  The Professional Schools at Berkeley conduct programs in New Delhi and Jerusalem. After an intensive course in the country's language, students from each of the professional schools spend at least two quarters working and studying in the program. A seminar is given each quarter by the program's director (a Berkeley faculty member). The students also work twenty hours per week as interns in local government or private agencies appropriate to their professional interest.

Students who have completed the equivalent of one year of graduate study at Berkeley are eligible to apply. Fellowships covering round trip air fare and living expenses in the foreign country are provided for the Professional School Fellows. Regular campus aid funds may also be used abroad.

Interested students should inquire at the office of the Dean of their professional school, or at the Office of International Education, 2538 Channing Way, Building D, Room 104-A.

For other programs abroad for graduate students, see “Study Abroad” under the “Services and Facilities” section of this catalogue.

Financial Aid to Graduate Students

Over 500 fellowships and graduate scholarships are offered on the Berkeley campus. Awards range from about $300 to $3,600 for the academic year, the majority carrying stipends in the range of $2,000 to $2,400. 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, Graduate Division, University of California, Berkeley, California 94720.

Application Procedure  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. Presently, the fellowship deadline is December 15 of the year preceding the year in which the award is tenable; however, this date is subject to change and a student should write for information in the late summer or early fall of the year preceding his proposed enrollment at Berkeley.

Beginning with the fall quarter, 1970, newly entering foreign students will fill out a separate application for admission, not the combined form. Since the number of fellowship and graduate scholarship awards available to them is

* Applications are not sent by airmail unless the applicant forwards in advance sufficient postage for 4 ounces of airmail postage.
extremely limited, the following procedure has been adopted: as the applications for admission of new foreign graduate students 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 by April 1, the national deadline for university fellowship notifications.

Continuing or returning graduate students at Berkeley in a fall quarter may obtain necessary fellowship application material from departmental offices or from the offices of the Dean of the Graduate Division. These applications and supporting materials must be filed with the department 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, except for certain federal awards which may be taken up in the summer, 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.

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. There are, however, a number of fellowships available that give support to students for periods of from three to five years.

Because a fellowship is designed to enable a student to devote full time to studies, appointees have, until recently, been prohibited from accepting employment concurrent with their period of tenure. However, in view of current living costs, the Dean of the Graduate Division may, upon recommendation of the student’s graduate adviser, approve a limited amount of paid employment, provided the fellowship holder is able to carry a full program of graduate study with distinction.

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 Graduate Admission/Fellowship Office by the same date as for other fellowships, December 15.

**National Defense Education Act Fellowships** A number of National Defense Graduate Fellowships are available under Title IV of the National Defense Education Act in specified fields of study. National Defense Foreign Language Graduate Fellowships are also available under Title VI of the same act, which provides for awards in certain designated modern foreign languages.

Students who apply through the regular University fellowship competition will be considered for awards under both Title IV and Title VI without making further application.

**Teaching Assistantships** Many departments make available teaching assistantships to outstanding graduate students, providing them an income of $3,402 to $3,501 per year, depending on the number of years of experience as a teaching assistant. The teaching assistant, chosen for his scholarly achievement and his promise as a teacher, must be a full-time student in residence. He serves his apprenticeship under the active tutelage and supervision of regular faculty members. Application is made directly to the chairman of the department in which the student wishes to teach. Students working for the Ph.D. degree in nutrition, biochemistry, and bacteriology are required to complete a specified minimum period of teaching as part of their degree programs.

**Teaching Fellowships** An appointee to a teaching fellowship must be a full-time student in residence who has been advanced to candidacy for the doctorate, or otherwise achieved appropriate professional maturity. He is chosen for his 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 $4,158 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.” Normally, their services, either full- or part-time, are contracted to give independent instruction in lower division courses. Associates may or may not be registered graduate students or candidates for degrees at this University. Appointees who are registered graduate students 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. Stipends for full-time service range from $7,152 to $8,952. Application is made to the individual departmental chairman.

**Research Assistantships** Positions as research assistants are available to qualified students in the various departments, institutes, and bureaus at the University. The stipends vary according to the type of research and the amount of time devoted to it. Application is made directly to the department, institute, or bureau.

*The salary for teaching and research assistantships is subject to United States income tax deductions. Salary figures given are gross, not net. Information about salary payment schedules should be obtained at the time an appointment is offered, since payment dates for work performed may be considerably later than dates when registration fees are due.*
Waiver of the Nonresident Tuition Fee  A limited number of waivers of the nonresident tuition fee are available for full-time graduate students with distinguished academic records or for teaching assistants, who are recommended, until departmental waiver quotas are filled. Applicants must enroll in a full program of study toward a higher degree, and cannot be the recipients of any fellowship, scholarship, grant-in-aid, or award from a city, state, or national government, or from any other source that would make them ineligible for the privilege of the award. The waiver application deadline is May 15. Applications for new and continuing students may be obtained from the Dean of the Graduate Division.

Waivers are not available during the summer sessions.

GRADUATE DEGREES OFFERED ON THE BERKELEY CAMPUS
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.
Atmospheric and Space Sciences, 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.
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., 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
Industrial Engineering and Operations Research
Mechanical Engineering
Mineral Technology
Naval Architecture
Nuclear Engineering
English, M.A., Ph.D.
Entomology, M.S., Ph.D.
Environmental Health Sciences, M.S., Ph.D.
Epidemiology, Ph.D.
Folklore, M.A.
Food Science, M.S.
Forestry, M.S., 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.
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 Languages, 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 Administration, M.A.
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
Rome Philology, Ph.D.
Sanskrit, M.A., 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.
Spanish, M.A.
Statistics, M.A., Ph.D.
Wildland Resource Science, Ph.D.
Wood Science and Technology, M.S., Ph.D.
Zoology, M.A., Ph.D.

* 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.

Interdisciplinary Groups See information on page 46.

Medieval Studies Students interested in specializing in medieval studies may be assisted by a Committee for Medieval Studies Advisory to the Dean of the Graduate Division. In drawing up a program of study, the committee will provide necessary information both to students and their faculty advisers.

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.
IV. Services and Facilities

The Berkeley campus is acclaimed for its vast range of facilities, opportunities, and services to students. This chapter deals with those aspects of campus life apart from taking courses—including information on campus services, student organizations and activities, fees and expenses, financial aids, and housing.

Campus Libraries

The University maintains a network of reading and research libraries throughout the campus, in a wide variety of fields. The libraries contain a total of over 3,750,000 volumes, and 50,000 current periodicals and serials, as well as government documents.

The Main Library houses an extensive loan stack collection comprising the bulk of the humanities and social science volumes; a current periodical room; a Reference Service which offers valuable assistance in the bibliographical tasks of research; a department containing official documents of the Federal, State, foreign, and international governments; a Map Room; a Newspaper and Microcopy Room; the Bancroft Library, which contains the Bancroft Collection, the Rare Books Collection, University Archives, the Mark Twain Project, and the Regional Oral History Office; the Morrison Library (a recreational reading room); and a graduate reading room and reserve service for students in the humanities.

The new Moffitt Undergraduate Library, scheduled to open fall, 1970, will provide a substantial open stack collection of basic books and periodicals in the humanities and social sciences, significant books of contemporary interest, and those required for classes.

Branch libraries are usually located in the respective academic departments or schools which they serve. These include:

- Biology
- Public Health
- Education and Psychology
- Agriculture
- Entomology
- Forestry
- Optometry
- Engineering
- Earth Sciences
- Astronomy, Mathematics, Statistics
- Physics
- Chemistry
- Biochemistry
- Environmental Design
- Music
- Art and Anthropology
- Social Science (graduate)
- Social Welfare
- East Asiatic
- Librarianship

A number of other campus libraries serve graduate and research needs in specialized fields. The largest of these are the Law Library and the library of the Institute of Governmental Studies.

A student’s registration card entitles him to borrow books from the campus libraries. Please consult the individual libraries for the regulations of the various units. Orientation leaflets are available in the Main Library.

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 the
registration fee paid by each student at registration. The purpose of this service is to conserve the student’s time for classwork and studies by preventing and treating acute illnesses.

Students who have paid the University Registration Fee are eligible for health service from the first day of the quarter in which they register to the last day of the quarter, or to the date of official withdrawal if they withdraw prior to the end of a quarter or semester. Following verification of academic status by departments concerned, continuing graduate students not registered, but working toward an advanced degree, may pay the Student Health Service fee (deadline: 10th day of classes each quarter) and, thereby, become eligible for care. One may receive hospital care up to twenty days in any quarter. Outpatient care includes emergency surgery, routine laboratory and X-ray procedures, and certain drugs as provided and prescribed by the staff of the Health Service. Specialty clinics complement the General Clinic and are staffed by consultants in the various specialties. The Department of Psychiatry is available to students who wish help with problems of an emotional nature. Service is limited to short-term therapy. Entering students are mailed a booklet describing the available services.

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.

Emergency and routine dental care is given during the hours of 8 to 10:30 a.m., and 1 to 3:30 p.m. A charge is made for all general dentistry, cleaning, treatments, X-rays, and consultations.

**Optometry Clinic** 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. Complete optometric services are available: vision examination, aniseikonic examination and lenses, low-vision aids, orthoptics and vision training, etc.

**Counseling Center** Any regularly enrolled student may avail himself of the services of a professionally qualified staff, to answer inquiries, or to talk with him at length, about scholastic performance, choice of vocation or personal adjustment. The student may request help in improving study skills, assessing interests and aptitudes, deciding on a major, or exploring long-range career opportunities. He may, if he wishes, discuss personal problems. Marital counseling is 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 communication between student and counselor is treated confidentially.

Students desiring to improve their basic educational skills 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.

Other services offered by the Center are legal counseling and special testing when required for admission to graduate or undergraduate programs. The Center also maintains directories and catalogues of colleges, professional and technical schools, as well as lists of scholarships, fellowships and loans. Students may use these reference materials even if not seeking counseling services.

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

Student and Alumni Placement Center  Students who seek part-time, temporary, vacation, or odd-job employment should apply to the Student Division of the Placement Center, located on the first floor of Temporary Building 6. Students are advised to avoid part-time employment during their first quarter at the University, if possible. Students should arrange their class schedules before applying to the Center; to be served, they must identify themselves by a current registration card or a letter of admission to the University. The Center's staff provides job assistance in meeting financial obligations and helps students determine those areas of work for which they are qualified.

School-year 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. Federal and state legislation has made available to the University funds providing a number of jobs—in a great variety of fields, both on and off campus—designed for needy students. Before applying to the Placement Center for these Work-Study Program opportunities, certification of financial need must be secured from the Office of Special Services, 2539 Channing Way.

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

The Center supports and subscribes to all equal opportunity employment practices.

Office of Educational Career Services  Located at 2120 Oxford Street, Berkeley, California 94720, this is the placement center for teaching, administrative, supervisory, and research positions—in universities, colleges, community colleges, high schools, and elementary schools, in this country and abroad. The Office serves all qualified graduates and 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.
Office of Financial Aid  The Office of Financial Aid is located at 2539 Channing Way. Here the student may obtain information and assistance under the Higher Education Act of 1965 as amended (National Defense Education Act Loans, Federal Student Guaranteed Loans, Educational Opportunity Grants and the Work-Study Program), Health Professions Student Loans and Grants, Law Enforcement Education Program, the University of California Grant Program, and University Loans. Please note: the application deadline for many of these programs is January 15 for the following fall. In addition, veterans' educational and Social Security benefits are administered by this office. For details on these services, please see the sections below on Financial Aid and Military Information.


Sports and Recreational Facilities  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, to every male student of the University, who may obtain, upon identification by registration card, a locker and free use of gym clothing and equipment. Apply at 2-B Harmon Gymnasium. Hearst Gymnasium offers similar advantages to women students.

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.

The Strawberry Canyon Recreational Area was opened in 1959 for the benefit of the entire University community. It contains the Haas Clubhouse, the Lucie Stern Pool, East Pool, and lounging, play, and picnic-barbecue areas. It is open, free of charge, to all currently registered students. Nonregistered students, faculty and nonacademic personnel may purchase privilege cards. Family group cards are also available. Further information may be obtained by calling Haas Clubhouse.

University Police  The University of California Police Department was established by the State Legislature in 1947 to perform primary and general police functions on the campuses and properties of the University of California. Legislative sessions of 1962 and 1968 extended the delegation of peace officer powers status for University Police. Sections 23501 of the Education Code and 830 of the Penal Code assign full police powers to the University Police 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 which is open from 12:00 noon to 4:00 p.m., Monday through Friday.

For emergency police, fire, or ambulance service, call 2-3333.

Dining Facilities  The Dining Commons is located just north of the Student Union directly across the plaza from Sproul Hall. More than 75,000 meals are served each week to the University community and visitors, by the multiple
facilities of the Dining Commons. A cafeteria, serving hot lunches and dinners, is located on the lower plaza level. A terrace, serving hot meals, sandwiches, and snacks; and the Golden Bear restaurant, offering table service, are located on Sproul Hall plaza level. The Bear’s Lair (located on the lower plaza level of the Student Union) has grill and fountain services. The Commons also operates a catering service for special affairs and student activities on campus.

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 quiet, comfortable 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 art studio, 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.

The Student Union and the Dining Commons were the initial steps in a building program culminating in the establishment of a Student Center located around a spacious plaza. A more recent addition to the Student Center was Eshleman Hall, which houses the ASUC publications and student activities as well as the Intercollegiate Athletic Department. An auditorium and theater, finished in 1968, completes the Student Center.

Student Organizations and Activities

The ASUC The Associated Students of the University of California is the official organization for student government. Membership in the ASUC is automatic 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. Students are urged to make use of their ASUC votes to secure the representatives who will serve them capably and articulately.

The Student Union which is operated by the ASUC, includes Heller Lounge (a public area), Pauley Ballroom, meeting rooms, the ASUC Bookstore, bowling lanes, games room, check-cashing service, the ASUC Box Office, and other facilities for the use and enjoyment of the student body.

Center for Educational Change The Center for Educational Change, located in 305 Eshleman Hall, has developed into a thriving center for educational programs and change on the Berkeley campus. Among its programs is the Center for Participant Education, a student group which encourages and helps develop student-initiated courses, some of which have since become a part of the regular curriculum. The students who publish The Slate Supplement, one of the pioneering student evaluations of teachers and courses, are also located in the Center, as well as the CEC Research Office. The Center works on various ad hoc projects in response to changes in the educational policy of the campus.

The Community Projects Office (CPO) This office, located on the street level of Eshleman Hall, serves as the ASUC clearinghouse for existing volunteer oppor-
tunities in the Bay area and as the resource agency for the development of new projects. For the student who is 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 teaching reading. 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 larger 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 Student Union 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**  Owned and operated by the ASUC, the student publications provide opportunities to undergraduates for activities in all phases of publishing: writing, editing, reporting, art and design, advertising, sales, and general management. There are five ASUC publications:

- *The Daily Californian*—the campus newspaper; published continuously since 1897, it has ranked among the best college papers in the country.
- *The Pelican*—the quarterly humor magazine; specializes in jokes and satire, with 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, located in the Student Center.

**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, 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 may be obtained at the Committee’s office in room 101 Zellerbach Hall or at the Information Desk of the Student Union.
- Music—a large selection of groups, including the Men’s Glee Club, the University Chorus, Repertory Chorus, 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 on Campus Besides regular ASUC-sponsored activities, there are over 150 organizations on campus serving special interests and abilities. In the spring and fall of each year, an Activities Fair is held in the Student Center Plaza to acquaint students with many of these organizations and to give them 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: Tower and Flame (lower division); Honor Students’ Society (upper division); Phi Beta Kappa (a national society of historical renown, open by invitation to the top seniors in nonprofessional fields); and others, including California Club, Gavel and Quill, and various groups for men and women separately. Most of these groups offer tutoring services.

Hobby and recreational groups abound—including folk dance, hiking, sailing, skiing, photography, and travel clubs, and hundreds of others.

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 between all nationalities. For application and further information, write or call International House, University of California, Berkeley, California 94720; telephone number (area code 415) 848-6600.

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

Military Information

This section discusses certain aspects of military service as they relate to student life, including Selective Service obligations, ROTC programs, and services to veterans.
Selective Service Regulations* Students subject to Selective Service regulations should obtain information from their local boards or the Selective Service Counselor located in Dean of Students—Selective Service Office, 210 Sproul Hall.

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

Aids to Veterans and Dependents of Veterans Veterans 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 the veteran's DD-214 (Report of Separation from the Armed Services) and, if applicable, all the documents necessary to support evidence of dependency. Unless the veteran has his application on file with the Veterans Administration within 15 days after the beginning date of classes, he will not be eligible for benefits from the first day of classes. Students with questions should inquire at the Office of Financial Aids.

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 a limited number of qualified male freshmen. During the freshman and sophomore years students attend AFROTC classes as described on page 143. 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 either the Air Force Reserve or Regular Air Force (Distinguished Graduate) and active duty in an officer specialty related to his academic preparation. For nonflying personnel the active duty commitment is four years, and for flying personnel it is five years after completing Air Force flying training. 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 $50 per month in nontaxable 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 144. The commissioning and active duty procedures are as described above. Cadets are paid $50 per month during the two academic years.

* Policies regarding student deferments may change during an increased military call-up. Practices vary with the local board, and the student should be in contact with his board.
Flying Training—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 a private pilot’s license. For additional information on any phase of the AFROTC program, please consult the Department of Aerospace Studies, 47 Harmon Gymnasium.

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 $50 month 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 $193.20 per month plus travel expenses. 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 $50 monthly 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, 151 Harmon Gymnasium.

Navy and Marine Corps Two 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 at least $50 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 commission in the Navy or Marine Corps Reserve, and serves three years of active duty. Commissions are also available in the U. S. Naval Supply Corps and Civil Engineer Corps Reserve.
2. 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 at least $50 monthly for 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 to eight 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.

**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 scholarships and National Defense Education Act loans. While the needs and resources of each student differ, the University can provide a general list of fees and expenses normally encountered (see Schedule A).

**SCHEDULE A: TABLE OF FEES AND EXPENSES (Fees are subject to change)**

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 Quarters 1970–71</th>
<th>Fall, Winter, or Spring Quarters 1971–72</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident Undergraduate</td>
<td>$159.75</td>
<td>$209.75</td>
</tr>
<tr>
<td>Nonresident Undergraduate</td>
<td>559.75</td>
<td>609.75</td>
</tr>
<tr>
<td>Foreign Undergraduate</td>
<td>568.75</td>
<td>618.75</td>
</tr>
<tr>
<td>Resident Graduate</td>
<td>167.00</td>
<td>227.00</td>
</tr>
<tr>
<td>Nonresident Graduate</td>
<td>567.00</td>
<td>627.00</td>
</tr>
<tr>
<td>Foreign Graduate</td>
<td>576.00</td>
<td>636.00</td>
</tr>
<tr>
<td>Resident Graduate, School of Law</td>
<td></td>
<td>$250.50</td>
</tr>
<tr>
<td>Nonresident Graduate, School of Law</td>
<td></td>
<td>850.50</td>
</tr>
<tr>
<td>Foreign Graduate, School of Law</td>
<td></td>
<td>864.00</td>
</tr>
</tbody>
</table>

**EXPLANATION OF FEES AND EXPENSES**

**Required Fees**

University Registration Fee—$100 per quarter; $150 per term, School of Law/Paid by all students. Covers normal expected usage of such facilities as laboratories, gymnasium, counseling and placement services, health service, etc.

Educational Fee—Paid by all undergraduates at $50 per quarter ($100 per quarter in 1971–72), by students in the School of Law at $90 per term ($180 per term in 1971–72) and by all other graduate students at $60 per quarter ($120 per quarter in 1971–72). Used to support a portion of the cost for the educational program.

Berkeley Campus Fee—Paid by all undergraduates in the amount of $9.75 per quarter, by students in the School of Law in the amount of $10.50 per term and by all other students in the amount of $7.00 per quarter.

* Fees are subject to change without notice.
Provide support for a wide range of activities sponsored by the Union Program and Facilities Board and the ASUC Senate, support The Daily Californian and other publications, cover use of the Union, help pay costs of construction of the Union building; and assist with the provision of ethnic studies on the Berkeley campus.

Nonresident Tuition—$400 per quarter; $600 per term, School of Law
See rules on page 24 to determine whether this fee is applicable.

Foreign Student Health Insurance—$9 per quarter; $13.50 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 (see page 31).

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 $80–$90 a year average for liberal arts students, but runs occasionally lower or higher ($50–$200) for students in preprofessional or professional curricula. Consult schools or departments for details.

Living Expenses
Room and board in living groups will range from $700 to $1,300 for the academic year, with an average of around $1,100. Apartment housing (rent, utilities, and food) if shared with others for nine months, would have the same range. If leased for twelve months the costs, of course, would be higher. Students should be aware that parking costs are extra.

Entertainment and Miscellaneous Costs
A student will need to take into account such things as laundry, cleaning, transportation, and personal effects. The San Francisco Bay Area has a tremendous variety of cultural and entertainment activities, to suit all tastes and interests, which should be considered in planning a budget.

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 ..................................... $2,400.00
Nonresident Students ................................. 3,600.00
Financial Aids

The University extends to students a variety of opportunities for financial aid. These are made available through donations and bequests by alumni and friends of the University, as well as by government agencies and special foundations and organizations. The ways in which a student may obtain financial aid include:

**Undergraduate Scholarships**  These are awards made on the basis of academic achievement and financial need. An overall grade average of B is the minimum required for consideration for a scholarship. A scholarship application, for an academic year, (or any one or more quarters of it) must be filed between October 1 and January 15 of the preceding academic year by all students. A parents' confidential statement must be filed by December 15 of the preceding academic year. Students who apply for a scholarship may apply for other forms of financial aid on an accompanying application form. For further details, consult the Committee on Undergraduate Scholarships and Honors, 2539-A Channing Way, University of California, Berkeley, California 94720.

**California State Scholarships**  These are awarded by the State. At the University of California at Berkeley they are in the amount of $300 and apply toward the registration fee. Application forms and information may be obtained from the California State Scholarship and Loan Commission, 1714 P Street, Sacramento, California 95814, beginning about October 1 for schools for the following year. Students are urged to apply for these.

**Fellowships and Graduate Scholarships**  For information on fellowships and graduate scholarships, please consult Chapter III, the Graduate Division.

**Prizes**  These are awarded on the basis of competition or outstanding ability in some area of creative or scholarly achievement. Prizes include awards for poetry, short stories, essays, and music composition. New undergraduates entering in freshman standing and taking at least 12 units for credit are eligible for the Kraft Prize for excellence in grades in their first quarter at the University. For further information on all prizes, please consult the Committee on Prizes, Room 9, 2543 Channing Way, Berkeley, California 94720.

**FEDERAL AND UNIVERSITY GRANTS**

**Educational Opportunity Grants**  Educational Opportunity Grants are intended to help entering freshmen of exceptional financial need, who for lack of financial means of their own or their families would otherwise be unable to enter or remain in college. The grants are administered by the Dean of Students, Office of Financial Aid, 2539 Channing Way. Students who apply for any kind of financial assistance are automatically considered also for Educational Opportunity Grants.

The grant may not be less than $200 nor more than $1,000 each academic year, depending on parental contribution and determined need. Grants are renewable if the student has continued financial need and maintains satisfactory academic progress. The duration of the grant is for the period, not more than four academic years, required for the student to complete his undergraduate course of study, at the institution of higher education awarding the grant.
University Grants-in-Aid  University Grants-in-Aid are given to those students who demonstrate exceptional financial need. Undergraduate and graduate students are eligible for Grant-in-Aid consideration if they are enrolled in a full-time course of study and have met the requisite application deadline date (January 15 for the following academic year). The University Grant-in-Aid program is administered by the Dean of Students, Office of Financial Aid, 2539 Channing Way.

FINANCIAL AID PROGRAMS FOR SPECIAL FIELDS OF STUDY

Health Professions Student Scholarship and Loan Program  Eligibility for HPS Scholarships is determined in the same manner as eligibility for NDEA loans with several notable exceptions. The applicant must have an exceptional financial need, he must be a full-time student and enrolled in a health professions school. The maximum scholarship is $2,500 for any twelve-month period whether the applicant goes to school three quarters or four quarters.

The Health Professions Student Assistance Program is to assist needy students in pursuing a course of study leading to a degree of doctor of optometry or the equivalent at the Berkeley campus.

Eligibility for HPS Loans is determined in the same manner as eligibility for NDEA loans with two notable exceptions. The applicant must be a full-time student and he must be enrolled in a health professions school. The maximum loan is $2,500 per academic year or $825 per quarter if the applicant is enrolled for four quarters. Repayment of the principal and accrued interest shall be made over a ten-year period; a uniform interest rate of 3 percent per year shall apply. Interest shall not accrue on loans and installments need not be paid during the period when a student borrower: (1) performs active duty as a member of a uniformed service, (Army, Navy, Marine Corps, Air Force, Coast Guard, Coast and Geodetic Survey, Public Health Service), or as a volunteer under the Peace Corps Act, (up to three years); (2) pursues advanced professional training, including internships and residencies (up to five years). A borrower may cancel a portion or all of his loan if he practices medicine, osteopathy, dentistry, or optometry in a shortage area in the United States, Puerto Rico, or the Virgin Islands and the appropriate State Health Agency certifies that the practice helped to meet the area’s shortage of and need for physicians, dentists or optometrists.

Health Professions Student Loans and Scholarships for both graduate and undergraduate students are administered by the Dean of Students, Office of Financial Aid, 2539 Channing Way; there is no deadline for application; applicants will be considered and awarded as applications are received as long as funds remain.

Law Enforcement Education Program (LEEP) Grants  As authorized by the Omnibus Crime Control and Safe Streets Act of 1968 (PL 90-351), a Law Enforcement Student Grant Program has been established by the Law Enforcement Assistance Administration to encourage and assist, financially, persons pursuing or interested in pursuing law enforcement careers. “Law enforcement” means all activities pertaining to crime prevention or reduction and enforcement of the criminal law.
The Law Enforcement Student Grant Program makes available payments for tuition and fees not exceeding $200 per academic quarter or $300 per semester for full-time or part-time enrollment in an undergraduate or graduate program leading to a degree or certificate in an area related to law enforcement. Beneficiaries must be full-time employees of a publicly funded law enforcement agency and must agree to remain in the service of the employing agency for a period of two years following completion of any course of study funded by a grant.

LEEP Grant funds for both graduate and undergraduate students are administered by the Dean of Students, Office of Financial Aid, 2539 Channing Way. At present, there is no deadline for application for the grant; applicants will be considered and awarded as applications are received as long as funds remain.

**Law Enforcement Education Program (LEEP) Loans** As authorized by the Omnibus Crime Control and Safe Streets Act of 1968 (PL 90-351), a Law Enforcement Student Loan Program has been established by the Law Enforcement Assistance Administration to encourage and assist, financially, persons pursuing law enforcement careers. “Law enforcement” means all activities pertaining to crime prevention or reduction, and enforcement of the criminal law.

Eligibility for LEEP Loans is determined in much the same manner as eligibility for NDEA Loans with several notable exceptions. Priority is given to police and correctional personnel, all applicants must be full-time students and each “applicant must intend to pursue, or resume, full-time employment in a law enforcement agency of a state, unit of local government, or the federal government upon completion of his studies.”

The Law Enforcement Student Loan Program makes available ten-year low-interest-bearing (3 percent) notes of up to $1,800 per academic year to full-time students enrolled in undergraduate or graduate law enforcement programs. These loans can be canceled at the rate of 25 percent for each year of full-time employment in a public state, local or federal law enforcement agency.

LEEP Loan Funds for both graduate and undergraduate students are administered by the Dean of Students, Office of Financial Aid, 2539 Channing Way. At present, there is no deadline for application for this loan; applicants will be considered and awarded as applications are received as long as funds remain.

**FEDERAL AND UNIVERSITY LOANS**

**National Defense Education Act Loans** The University of California also participates in the National Defense Education Act Student Loan Program. This program is open to entering, returning, and continuing undergraduate and graduate students who can effectively establish need for funds to continue their education.

**Eligibility** Any regularly enrolled undergraduate or graduate student, or applicant for admission is eligible for an NDEA loan if he (1) is a United States citizen or a permanent resident of the United States, (2) will be satisfactorily pursuing at least a half-time program of academic work during the period for which the loan is granted, and (3) can establish that financial aid is needed for him to continue his education. Undergraduate students are eligible to make application for $325 per quarter or $1,000 per academic year (three quarters) with
total cumulative loans as an undergraduate to $5,000. Graduate and professional students are eligible to make application for $825 per quarter or $2,500 per academic year (three quarters) with total of $10,000 cumulative loans.

Terms Students must reapply each academic year (three quarters) or for the winter and/or spring quarters when a new loan is desired. The student will be informed by letter at the time the loan is granted of the date on which checks will be released. No checks will be available for registration by mail. If a student applies for a loan to cover three quarters, one third of the total amount will be available for each quarter.

Repayment is normally made over a ten-year period. Any student who has received an NDEA loan at any time while attending this campus must arrange for an exit interview with the Loan Office, Room 1 Sproul Hall, during the last quarter he is in attendance. The repayment period (with simple 3 percent interest) starts nine months after loan recipient ceases to be a half-time student, with the first annual installment due at the end of twenty-one months. Institutions may extend deferment of installment due on principal (but not on interest) to part-time students; deferment shall not aggregate more than three years.

Up to 50 percent of the loan may be forgiven for teachers in nonprofit private elementary and secondary schools, institutions of higher learning, and public schools in the United States. The portion of the loan to be forgiven is calculated as a percentage of the original amount rather than of the amount of the loan remaining unpaid on the first day of service. Cancellation rate for teachers shall be 15 percent each complete academic year for a full-time teacher in a public or other nonprofit elementary or secondary school which is in the school district of a local educational agency eligible in such a year for assistance under Title II of Public Law 874—a school in which there is a high concentration of students from low-income families.

When to Apply Application forms are available from the Dean of Students, Office of Financial Aid, 2539 Channing Way, University of California, Berkeley, California 94720, by mail or in person. An application is also included in each scholarship application packet issued by the Berkeley Scholarships Office.

All applicants for NDEA loans for the academic year 1970–71 (summer, fall, winter, and spring quarters—or any one or more of these) must submit an application by January 15, 1970.

Federal Insured Student Loan Program Students who need funds to finance their college education may be eligible for a Federal Insured Student Loan as provided under the provisions of the Federal Higher Education Act of 1965.

Qualified students enrolled in a full-time program at the University of California may obtain loans from participating private commercial lenders upon recommendation of the University. Such lenders may be banks, credit unions, and savings and loan associations.

Students may borrow up to $1,500 a year. Students with an adjusted family income of less than $15,000 a year pay no interest while attending the University on a full-time basis. The federal government pays the lender interest (7 percent maximum) during this time. The student begins repayment to the lender when he graduates, ceases to be full-time, or withdraws from school. Pending legislation may change some aspects of this program.
University Loans These loans are for purposes directly connected with the student’s attendance on the Berkeley campus. Loans are not intended to cover the entire expenses of attendance, but rather are a supplement to the student’s earnings, assistance from parents, or scholarship aid.

To be eligible for a loan, the student must have ordinarily been in residence on one of the campuses of the University for at least a quarter, have a satisfactory scholastic record, and have a reasonable plan for repayment. This repayment schedule should be completed before the following school year. A cosigner acceptable to the Dean of Students must be provided. Collateral cannot be accepted in lieu of a cosigner. Married students must have the signature of the spouse as cosigner in addition to cosigner.

Certain students, such as those holding fellowships or graduate or undergraduate scholarships and those holding University appointments, may make temporary loans even in their first quarter of residence if they are able to provide a satisfactory cosigner. Further information may be obtained from the Dean of Students, Office of Financial Aid.

Short-term emergency loans are also available. These loans usually do not exceed $50 in amount and are usually payable in two weeks. Loan funds for both graduate and undergraduate students are administered by the Office of the Dean of Students.

Regents Loan Eligibility requirements for this loan are similar to those required for the University Loan. Any registered student (undergraduate or graduate) who, in the opinion of the Financial Aid Committee, demonstrates a need for funds essential to his continued University attendance and whose academic progress is satisfactory, is eligible to apply for a Regents Loan. Contingent on the availability of funds, the maximum loan is $1,000 in any one year not to exceed an overall total of $4,000 during matriculation at the University of California. The repayment period is five years with the first payment due six months after graduation or withdrawal at which time interest of 3 percent per annum will accrue on the unpaid balance. All loans to married students will require the signature of the spouse as cosigner. One cosigner is required on loans of $600 or less but two cosigners are required when the loan or cumulative loan is over $600.

STUDENT EMPLOYMENT

Work Study Program Part of the Higher Education Act of 1965 provides for a Work-Study program for college students. The basic purpose of the program is to provide part-time employment for college students who need work to stay in college, with preference going to students from low-income families. The law provides for both on and off-campus jobs with off-campus jobs limited to public or nonprofit private organizations.

Eligibility In order to be eligible for a job established under the Work-Study Program, a student must:

1. Be a citizen or national of the United States or in this country on an immigrant visa.
2. Need the funds to continue his education, with preference going to students from low-income families.
3. Be a regular student in good standing and registered for a full program; for summer employment he must be a continuing student or have been admitted for the fall quarter.

Application forms are available from the Dean of Students, Office of Financial Aid, 2539 Channing Way, University of California, Berkeley, California.

Other Financial Aids For additional opportunities for financial aids, see Student and Alumni Placement Center, Aids to Veterans, Aids to Dependents of Veterans, and Reserve Officer Training Corps.

Living Accommodations

There is a wide selection of housing at the Berkeley campus. Admission to this campus does not guarantee housing reservations. Rather, students should acquaint themselves, well in advance of their enrollment, with the various living arrangements. Housing Office, 2401 Bowditch Street, is prepared to send descriptive material upon request.

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 920 married students in the University Village. The remaining students live in rooms and apartments in the community. Students consider their individual wishes and needs and select their own accommodations.

University Operated Residences The University has residence halls for men and women. Students may request applications as early as six months prior to entrance. Applications are mailed in April for the fall quarter, November for the winter quarter, and January for the spring quarter, to students requesting them. Residents entering in the fall will have contracts for the period of three quarters, fall, winter, and spring. Assignments are based on prompt application, class in the University, home address, hall choice, and admission to the University. Contract fees may be paid in full in advance or by installments. A brochure describing the residence halls in detail is sent to applicants.

Privately Operated Residences There is a selection of privately operated residences (boarding houses, cooperatives, and apartments) adjacent to the campus. Students make reservations directly with these groups. In the cooperatives, moderate rates are made possible by the agreement of the residents to contribute five to seven hours of work a week to help maintain and operate the houses. A brochure entitled "Living in the Community" is available upon request to the Housing Office.

University Village for Married Students The University operates 920 apartments for married students in Albany, about three miles from the campus. There are one- to three-bedroom apartments, most of which are unfurnished, and the rent includes utilities. There is a waiting list for these units, and married students should apply early to add their names to this list.

Fraternities and Sororities Please see page 63.

International House Please see page 63.

Rental Housing in the Community Housing Services has card files of rental listings for students, staff, and faculty. Accommodations are not listed unless they
are available to all students without regard to race, color, or creed. These rentals are not inspected by the University, but are listed as a service to students. Lists of rentals are not mailed, since the listings change daily. Personal inspection is recommended before any rental is accepted. A hotel-motel list will be sent upon request so that students may arrange for temporary accommodations while they look for housing.

There are street maps and rental advice guides available at Housing Office. Most rentals require written agreements and academic or calendar year leases. All contracts should be read with care, so that both students and landlords are in agreement about the terms, fees, and obligations, as well as rules governing residence.

The rental listings include rooms, apartments, flats, and houses. Most students share rentals to reduce the cost, since the campus is in a high rent area. The present general practice is to look for rentals in early September so that the rental period will coincide with the academic calendar.

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 a dozen 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 300 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, the California Monthly Journal, 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

Undergraduate students at Berkeley enjoy a number of opportunities to study abroad at the following study centers around the world:

- Chinese University of Hong Kong
- Georg-August University, Goettingen, Germany
- International Christian University, Tokyo
- American University of Beirut
Hebrew University, Jerusalem
University of Bordeaux, France
University of Lund, Sweden
University of Madrid, Spain
University of Padua, Italy
Universities of Birmingham, St. Andrews, Stirling, Sussex, and Edinburgh, United Kingdom
University of Bergen, Norway

Trinity College of Dublin University, Ireland
Mexico City Center
Paris (Graduate Teaching Credentials Program)
Intercollegiate Center for the Study of Classics in Rome
India Professional Schools Program
(See page 52.)

Students must have a minimum of 2.75 overall grade-point average. For most programs, students are expected to complete with a grade of B the equivalent of six quarters of the language of the country in which they plan to study. Exceptions to this requirement are for the programs in Japan, Hong Kong, Israel, Lebanon, Sweden, and Rome.

Students receive full unit credit for the work taken overseas towards their degree. However, the number of courses students may take abroad in their major and the extent to which the work overseas satisfies breadth requirements, is subject to the approval of the student’s department and/or college.

The undergraduate programs are intended primarily for juniors. Students who wish to participate in the program as seniors should be aware of the senior residency requirement of their College which usually requires additional study at Berkeley for two quarters upon completion of the year abroad.

The estimated cost of study abroad varies according to the centers. 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. For further study abroad opportunities for graduate students see the Graduate Division section of this catalogue.

Interested students should consult with their academic advisers and with the study abroad counselors in the International Education Office, Room 104-A, Building D, 2538 Channing Way.
V. Colleges and Schools

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 (see Chapter III), five colleges, and twelve schools:

**Colleges**
- Agricultural Sciences
- Chemistry
- Engineering
- Environmental Design
- Letters and Science

**Schools**
- Business Administration
- Business Administration, Graduate
- Criminology
- Education
- Forestry and Conservation
- Journalism, Graduate
- Law
- Librarianship
- Optometry
- Public Affairs, Graduate
- Public Health
- Social Welfare

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 chapter provides a broad survey of the colleges and schools and their degree programs. For further information, see the individual school or college Announcements.

[W] COLLEGE OF AGRICULTURAL SCIENCES

The College of Agricultural Sciences at Berkeley is as old as the University itself. The Organic Act of March 23, 1868, by which the California State Legislature established the University, also required the creation of a College of Agricul-
ture as the first duty of the Board of Regents. In 1966 the name of the College was changed to College of Agricultural Sciences to more adequately describe its present program.

Modern agriculture is a broad subject, where opportunities for both men and women are plentiful. Interesting employment is now offered to the qualified person in such fields as research, industry, business, education, environmental purity, communications, conservation, recreation, and public health. Modern agriculture is not limited to rural communities, but reaches into problems of urban life and the quality of the environment.

The College offers undergraduate instruction leading to the Bachelor of Science degree and, when completed, opportunities for immediate employment exist in most fields.

Two curricula are offered—Agricultural Sciences (with seven majors, listed in the section concerning general requirements for the bachelor’s degree) and Conservation of Natural Resources. Related curricula in the College are also available in preforestry and preveterinary. Courses in range management will be offered by the School of Forestry and Conservation (see their Announcement). In general, the student studying for the B.S. degree may take the first two years on any campus of the University where undergraduate instruction is offered, or at any other accredited institution of higher learning.

Students wishing additional training after the B.S. degree may pursue studies leading to the M.S. and the Ph.D. degrees, and thus qualify for academic careers in a college or university, or other positions of responsibility in public or private industry.

Admission

Applicants to the College of Agricultural Sciences must meet the general University requirements for admission, given in Chapter I. It is recommended that high school preparation for work in the College should include: algebraic theory (% or 1 year); trigonometry (% year); physics (1 year); chemistry (1 year); and, for those proposing to major in forestry, mechanical drawing (% year).

General College Requirements for the Bachelor’s Degree

The Bachelor of Science degree is awarded to those candidates who satisfy the following conditions: (1) general University requirements (see Chapter II); (2) at least 180 units of University work (not more than 6 units may be in lower division physical education courses); (3) of the above total, 54 units must be in upper division courses, those numbered 100–199; and (4) completion of a curriculum major in the College of Agricultural Sciences.

The curricula and majors are described in detail in the course section of this catalogue. Majors in Agricultural Sciences are: agricultural economics; agricultural science; dietetics (Nutritional Sciences); entomology (Entomology and Parasitology); food and nutritional sciences (Nutritional Sciences); genetics; and soils and plant nutrition. Preparation for graduate work in plant pathology is offered under the agricultural science major. 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 who are 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.

The staff in the Office of the Dean of the College of Agricultural Sciences will assist the student in selecting a major. Faculty advisers in the student’s field of interest are available the year around to help in planning programs. For further details, see the ANNOUNCEMENT OF THE COLLEGE OF AGRICULTURAL SCIENCES, available without charge from the Office of the Dean of the College.

**Study-List Programs**  Students are required to have the approval of their faculty adviser each quarter, prior to final endorsement of the study list by the Dean. This approval includes selection of courses in the program and any variation from the normal minimum (12 units) or maximum (18 units) course load.

**Graduate Programs**

Graduate instruction leading to higher degrees is available in the following fields—they are described in the course section of this catalogue: agricultural chemistry; agricultural economics; biophysics (Cell Physiology and Soils and Plant Nutrition); comparative biochemistry (Cell Physiology, Nutritional Sciences, and Soils and Plant Nutrition); entomology (Entomology and Parasitology); food science (Nutritional Sciences); genetics; microbiology (Nutritional Sciences and Soils and Plant Nutrition); nutrition (Nutritional Sciences); parasitology (Entomology and Parasitology); plant pathology; plant physiology (Cell Physiology and Soils and Plant Nutrition); and soil science (Soils and Plant Nutrition).

In addition to studying with a well-qualified faculty, the graduate student is afforded the opportunity to work with members of the research staff of the Agricultural Experiment Station. A number of research assistantships are available to outstanding students, as well as fellowships, graduate scholarships, and teaching assistantships.

For further information, consult the ANNOUNCEMENT OF THE COLLEGE OF AGRICULTURAL SCIENCES, available free of charge, and Chapter III of this catalogue.

**Facilities**

Among the special facilities available to students are the Agriculture and Giannini Foundation libraries which house distinguished collections of source material in agriculture and agricultural economics; the 6.2-acre Oxford Tract which contains open plot areas, greenhouses, laboratories and environmental control cabinets; related facilities at the Gill Tract in nearby Albany, as well as special libraries, electron microscopes, computers, and a wide range of equipment and specialized laboratories maintained by the departments in Giannini, Hilgard, Morgan, Mulford, and Wellman halls on the main campus.
Student Activities

Students in the College of Agricultural Sciences participate not only in the general student affairs of the University but also in activities of their own. Departmental clubs, social as well as professional in character, are open to both graduate and undergraduate students. The informal atmosphere of the College encourages a friendly student-faculty relationship.

COLLEGE OF CHEMISTRY

The College of Chemistry was established in 1872, and the first building on the Berkeley campus, South Hall, was designed as a chemistry laboratory. In the early years it was the college for practically all students desirous of scientific training, there being no separate college for physics, geology, and biology. In 1894 a separate College of Natural Sciences was created, which was in 1915 merged into the present College of Letters and Science, but in neither of those reorganizations was the College of Chemistry absorbed. Consequently, since 1894, students have had the choice of a chemistry major in the College of Chemistry, leading to a B.S. degree through a curriculum which emphasizes advanced work in the sciences, or in the now College of Letters and Science, leading to an A.B. degree through a curriculum with a greater proportion of courses in the humanities and social sciences.

Course offerings in chemical technology began in 1912, but not until 1955 did chemical engineering become formally a separate department. Today the College of Chemistry is a two-department college: the Department of Chemistry and the Department of Chemical Engineering.

Admission and Degree Requirements

For information on recommended high school preparation for admission, as well as specific requirements for degrees, see the respective Departments of Chemistry and Chemical Engineering.

Special Programs

There is an optional Cooperative Work-Study Program in which students in chemistry and chemical engineering may participate. Details may be obtained from the Office of the Dean of the College of Chemistry.

Facilities

The present College of Chemistry occupies a group of buildings at the east edge of the campus, with undergraduate and graduate student laboratories, shops, lecture rooms, and offices having a total floor area of some 270,000 square feet. Additional research space is available in the Giauque Low-Temperature Laboratory, the Laboratory of Chemical Biodynamics, Lawrence Radiation Laboratory, and the Inorganic Materials Research Laboratory. Its working library collection has about 19,388 volumes and 379 journals. It offers not only curricula leading to undergraduate and graduate degrees in Chemistry and Chemical Engineering, but also the basic chemistry courses for students in all other curricula, including those students preparing for careers in engineering or in medicine.
COLLEGE OF ENGINEERING

The College of Engineering offers programs in a wide variety of engineering fields, preparing the undergraduate and graduate for career work in engineering design, development, research, and teaching. The programs are 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, as well as an awareness of the economic factors in engineering.

Four-year undergraduate curricula are offered in the following professional fields: civil, electrical (and computer sciences), industrial (and operations research), and 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 engineering field. In addition, there is a curriculum in Engineering Science with programs in bio-engineering, engineering geoscience, engineering mathematics or mathematical statistics, and engineering physics. All of the above curricula and programs lead to the Bachelor of Science in Engineering. Some undergraduate courses are also given in the fields of naval architecture and of nuclear engineering.

Students with distinguished scholarship (B average or better, particularly in upper division courses) are encouraged to enter graduate study. 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, electrical (and computer sciences), industrial (and operations research), mechanical, and nuclear engineering, materials science, engineering geoscience, and naval architecture. Students with distinguished undergraduate scholarship in majors of mathematics or physical science may enter the graduate program in some of the engineering fields.

Admission

Applicants to freshman standing in the College must satisfy general University requirements as outlined in Chapter I. 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 mathematical topics listed above. Deficiencies in any of the above subjects will delay the normal course of study. It is suggested that an engineering student also include a minimum of 1 unit of high school mechanical drawing as part of his preparation for the study of engineering since graphic communication is an essential part of engineering.

Lower Division Program

The lower division program emphasizes fundamentals in science, mathematics, and engineering supportive of subsequent upper division specialization. It also
provides an introductory background in the humanities and social sciences. Elective units are provided so that students may select courses of individual interest in consultation with their advisers. The elective units may be used to achieve early specialization or to acquire greater breadth and perspective.

Entering freshman students with clearly defined educational and career goals should refer to the detailed presentation of the curriculum of personal interest which starts on page 81 of the General Catalogue or the departmental section of the Engineering bulletin.

Those students interested in pursuing one of the professional engineering fields other than engineering science (civil, electrical and computer sciences, industrial and operations research, mechanical, materials science and engineering) but not certain of their ultimate choice should consider the following common lower division program. This broad program combines preparation for any one of the above professional engineering majors with an introduction to each. Consequently, election of a specific field and curriculum may be deferred until the junior year without loss of time or normal progress.

Common Lower Division Program

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Fall Units</th>
<th>Winter Units</th>
<th>Spring Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 1A–1B–1C, Analytic Geometry and Calculus</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1A–B, General Chemistry</td>
<td>4</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Physics 4A–4B, Physics for Scientists and Engineers</td>
<td>–</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Engineering 1, Computers and Their Applications</td>
<td>4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Engineering 28, Engineering Graphics and Introduction to Conceptual Design</td>
<td>–</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Civil Engineering 10, Engineering Survey Measurements</td>
<td>–</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>*Humanities or Social Science Studies</td>
<td>3</td>
<td>–</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>15</strong></td>
<td><strong>16</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>Fall Units</th>
<th>Winter Units</th>
<th>Spring Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 51A–51B–51C, Second-year Calculus</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Physics 4C–4D–4E</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Engineering 45</td>
<td>4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Engineering 17, Introduction to Electronic Systems, Circuits and Devices</td>
<td>–</td>
<td>–</td>
<td>4</td>
</tr>
<tr>
<td>*Humanities or Social Science Studies</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>15</strong></td>
<td><strong>15</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Admission to Advanced Standing

Students who have completed college-level work elsewhere may be admitted in advanced standing to the University at any level subject to the general requirements for admission in advanced standing as set forth in Chapter I. In particular, the lower division engineering program is offered by most junior colleges in California and many students elect to begin their college career there

*Humanities or social science studies should include at least 15 units of humanities or social sciences and must include, with the exception of the engineering science curriculum, at least one two-quarter sequence of one of the following: Anthropology 2–3; Art 1A–1B–1C–1D; Classics 10A–10B–10C; Comparative Literature 1A–1B; Dramatic Art 1A–1B; Economics 1–3; English 1A–1B; History 4A–4B–4C–4D or 17A–17B–17C–17D; Philosophy 2–4; Political Science 1–2; Psychology 1–30; Rhetoric 1A–1B; Social Science 1A–1B.
with subsequent transfer to the University. The success of such transfer students in upper division work clearly demonstrates the equivalence and excellence of this alternative preparation. If followed, it is suggested that the lower division program be completed prior to transfer, especially the sequence courses of mathematics, physics, and chemistry, in order to realize effective and efficient subject coverage.

**Upper Division Programs**

The upper division curricula and programs are described in detail under the various engineering departments in the course section of this catalogue, and in the **ANNOUNCEMENT OF THE COLLEGE OF ENGINEERING**.

Normally students in the College should satisfactorily complete the lower division program prior to enrolling in upper division engineering courses. Exceptions may be made if the lower division deficiency is not prerequisite to the intended upper division course and the lower division program is being completed expeditiously.

**Special Regulations**

The College of Engineering has special regulations concerning scholarship, residence, and degree requirements, which supplement or supersede general University regulations. These are as follows:

A student is subject to dismissal who (1) does not have a minimum C average for all work undertaken in the University (2) does not obtain a minimum C average in each quarter.

Engineering science majors must maintain a minimum grade-point average of 2.75 in the lower division and a minimum grade-point average of 2.50 in the upper division. Transfers to the engineering Science curriculum must have an overall grade-point average of 2.75 or better.

Students may not enroll in more than 18 units, or fewer than 12 units, in a given quarter without special approval of the Dean.

A student must have a minimum C average in all upper division technical courses required in the curriculum and must demonstrate proficiency in the use of English, in order to obtain the B.S. degree.

At least the final 45 units of a regular program in Engineering must be taken in residence on the Berkeley campus in order to obtain the degree, and all curriculum requirements must be satisfied.

All students must complete a total of 27 units of approved courses in humanities and social sciences, of which at least 9 units (4 units for Engineering Science majors) must be in upper division courses.

Regularly enrolled students, or those formerly enrolled and planning to return to engineering at this University, who seek degree credit for a course taken elsewhere, including University Extension, must receive permission from the Dean of College before enrolling in the course.

**Graduate Study**

The following degree designations are used in Engineering: Master of Science, Master of Engineering, Doctor of Philosophy, Doctor of Engineering. The degrees of M.S. and Ph.D. provide study opportunities in Engineering Science for B.S. and M.S. graduates in any of the science fields or mathematics.
For details on specific graduate programs, please consult the Announcement of the College of Engineering, and the Engineering departments in the course section of this catalogue. For general requirements of the Graduate Division, consult Chapter III.

**Special Facilities, Programs, and Services**

**Cooperative Program** This is an optional program in which engineering students may alternate work and study periods to obtain actual industrial experience. The undergraduate in the cooperative program ordinarily requires five years to obtain his degree. At the graduate level the number and duration of work periods govern the extension of time for completion. Detailed information on participation, job opportunities, and typical student earnings is available at the Office of the Dean of the College of Engineering.

**Engineering Research** Research at the University is closely integrated with the graduate engineering programs, and strongly influences the undergraduate programs. Engineering research programs are directly supervised by the faculty. Some research is supported by University funds and much is supported by grants and contracts with industrial organizations, foundations, and public agencies. The guiding principles behind these research programs (and behind acceptance of outside support) is faculty-student cooperation; activities that are not based on graduate student participation are discouraged. The College policy is to employ graduate students, and occasionally qualified undergraduates, in part-time research assistantships as the need arises. Over 500 students are currently so employed, in addition to those supported by scholarships, fellowships, traineeships, and other means.

Research activity at Berkeley and the Richmond Field Station, including projects supported by both internal and external funds, are coordinated and served by the Office of Research Services in the College of Engineering, except for the Electronics Research Laboratory, which contains its own service organization. Outside sponsorship of projects conducted by faculty and organized research units amounts to about $6 million annually. Additional funds are available to engineering researchers engaged at other scientific facilities outside the College of Engineering, including the Biomechanics Laboratory, the Computer Center, the Inorganic Materials Research Division of the Lawrence Radiation Laboratory, and the Space Sciences Laboratory. Organized research units within the College are:

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

The College also has two departmental research laboratories (Hydraulic Engineering Laboratory and Structural Engineering Laboratory), as well as research laboratories in every department serving various groups not affiliated with any of the above.
Continuing Education in Engineering

Through University Extension, a program of courses in engineering is offered on the University campuses and in communities throughout California where sufficient enrollment is assured. This program is designed to provide professional engineers an opportunity for review or for systematic study of new fields. Fields of instruction (covering both practical and theoretical aspects) include: civil, electrical, materials, mechanical, and operations research. *

Continuing Education in Engineering also arranges technical conferences and special short courses in selected engineering problems for specific groups. These are guided by the Faculty of the College.

Student Activities and Services

Various student and professional organizations supplement the program of studies. These groups seek to stimulate the growth of professional attitudes and to advance student welfare. Details about these and other activities and opportunities are available from the College.

Research Facilities

These are described in detail under Engineering in the course section of this catalogue, and 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. As the name “environmental design” suggests, it promises a synthesis of the fields which deal with the functional and aesthetic quality of man’s surroundings. These fields are among the most complex of the arts and professions taught at this University, drawing upon research in technology, decision theory, and human perception and behavior as the bases of their environment. The College’s graduate and undergraduate curricula are continually changing because man’s environment changes. As more and larger metropolitan areas develop, as physical and social mobility increases, people’s aspirations change. The physical form of the metropolis, as well as its institutions and services, must adapt to these new conditions and aspirations. As part of a great University, the College relies upon work in the humanities, the social and natural sciences, technology, and the other professions with which the environmental design fields are linked. Whether a student chooses a career in private practice, public service, or research, the satisfactions are immense. Above all, he has the experience of joint exploration with the faculty of subjects requiring a flexible intellect and fresh point of view. He will employ an intellectual as well as an intuitive approach—both essential to creativity.

Undergraduates entering the College for the first time will enroll in a four-year curriculum leading to the preprofessional degree of Bachelor of Arts with

* Students enrolled in the College must obtain approval from the Dean of the College if they plan to enroll in an Extension course. Degree subject credit in previous Extension courses is granted to entering regular students only upon approval of the Dean.
a major in either architecture or landscape architecture. Only students presently enrolled in the College will be permitted to complete the old curricula leading to the professional undergraduate degrees of Bachelor of Architecture and Bachelor of Landscape Architecture if they choose to do so. On the graduate level the College presently offers curricula leading to the Master of Architecture, Master of Landscape Architecture, Master of City Planning and the Doctor of Philosophy in 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.

New undergraduate and graduate curricula in the Department of Design will be established in the College of Environmental Design in the near future. An undergraduate major in design leading to a similar Bachelor of Arts degree and a graduate major in design leading to the Master of Arts degree, emphasizing industrial and communications design and design theory, will then be available in this College. The major will not be open to new students until a transition stage has been completed and a new curriculum adopted.

Undergraduate Admission and Requirements for Degrees

Applicants to freshman status in the departments of Architecture or Landscape Architecture should include in their secondary school programs the following subjects: Architecture: four years of mathematics; one year of physics or chemistry; and one year of freehand drawing. Landscape Architecture: three years of mathematics, including plane geometry and trigonometry; one year of chemistry; one year of freehand drawing; and one half-year of mechanical or instrumental drawing.

Detailed information on required courses and suggested programs in both of these curricula and the existing curriculum of the Department of Design is available in the Announcement of the College of Environmental Design, which may be obtained free of charge from the Office of the Dean or the departmental offices of the College.

Requirements and procedures for admission, registration, and enrollment are synonymous with those of the University in general.

The Bachelor of Arts Degree

The four-year curriculum leading the to A.B. degree in the College of Environmental Design with optional majors in architecture and landscape architecture, is organized to give the student a broad general education as well as an introduction to the problems of environmental design. It is a preprofessional curriculum designed to orient the student to an understanding of the links between society and architecture, landscape and the community, for participation as a citizen in community affairs and development, or as an introduction to careers related to environmental development. It will serve the important function of preparation for professional study at the graduate level in architecture and landscape architecture for those who qualify for admission to the Graduate Division upon graduation with the A.B. degree.

The four-year curriculum presently being reorganized in the Department of
Design will lead to a similar A.B. degree with a major in design, emphasizing industrial and communications design and design theory.

**Enrollment Beyond 195 Units**  A student who has credit for more than 195 quarter units of university-level work will not be permitted to continue in the College of Environmental Design without the approval of the Dean.

**Summary of Requirements for the A.B. Degree in the College of Environmental Design**

**General University Requirements**  These are Subject A and American History and American Institutions, and are discussed on page 31.

**College of Environmental Design Requirements**  These are given only in brief; they are discussed in detail in the *Announcement of the College of Environmental Design*, available at 230 Wurster Hall.

**Unit Requirement**  The student must complete at least 180 units. Of these, at least 80 must be in courses chosen from the College of Letters and Science List of Courses and at least 54 units in upper division courses chosen from the College of Environmental Design List of Courses. No more than 60 units in the courses of any one department will be counted toward the A.B. degree. Not more than 105 units of transfer credit will be counted toward the degree for students transferring from junior colleges.

**Scholarship Requirement**  Candidates for the A.B. degree must have at least a C average in all courses undertaken in the University and all courses in the major program.

**Breadth Requirements**  A minimum number of courses in each of the following general academic areas must be completed (courses acceptable in each area are listed in the announcement):

- Reading and Composition, 8 units in 2 courses.
- Foreign Language (in one language), 16 units in 4 courses or equivalent.
- Natural Sciences, 24 units in 6 courses (as specified for the departmental option).
- Other Humanities, 16 units in 4 courses.
- Social Science, 16 units in 4 courses.
- General Electives, 36 units.
- General College Courses, 24 units.

**Major Requirement—Architecture and Landscape Architecture:**  The student must also complete the 40 units required in the departmental major as outlined by the departments of Architecture and Landscape Architecture who administer their major. These majors are described in the course section of this catalogue.

Normally, transfer students, other than those from accredited schools of architecture or landscape architecture, will be required to take all courses in the major subject at the University of California, Berkeley. Transfer students seeking advanced standing must present for review by the faculty during the preenrollment period an exhibit of previous work in their major. Courses numbered En-
Environmental Design 3 and 4 must be taken in the first year of residence at Berkeley. Students planning to transfer to Berkeley at the end of a two-year period at another institution will be able to complete all major requirements without loss of time if they have made regular progress in meeting the breadth requirements including the specified courses in the natural sciences.

Design  In the spring quarter, 1969, the College of Letters and Science discontinued admission to the major in design. A new undergraduate major in design leading to the Bachelor of Arts degree will be established in the College of Environmental Design in the near future. Only continuing students enrolled in the major before the end of the spring quarter, 1969, may complete the existing curriculum provided they make normal progress toward completion of the degree. The major will not be open to new students until this transition stage has been completed and a new curriculum adopted.

Graduate Study

Programs are offered leading to the master’s degree in Architecture, Landscape Architecture, City and Regional Planning, and Design, respectively, and to the Ph.D. degree in Architecture and in City and Regional Planning. Application is made directly to the Graduate Division of the University; those 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. For specific graduate programs and degree requirements in the environmental design fields, please refer to the course section of this catalogue and the *ANNOUNCEMENT OF THE COLLEGE OF ENVIRONMENTAL DESIGN*.

Facilities

The Environmental Design Library  The library, located in 210 Wurster Hall, contains over 80,000 books and pamphlets, and over two thousand periodical titles in the design fields.

Teaching Facilities  Facilities in Wurster Hall include drafting studios, an architecture shop, ceramics and glass-blowing laboratories, printed and woven textile studios, sculpture studios for the Department of Art, photographic laboratory, and exhibition and seminar rooms.

The Blake Estate  This land, 10½ acres of gardens and greenhouses, serves as a teaching and research laboratory for landscape architecture students.

The Institute of Urban and Regional Development  Established in 1963, this institute focuses research attention upon problems of city, metropolitan, and larger regional development. Its Center for Planning and Development Research conducts research in city and regional planning, related social and technical processes, and administers a Laboratory for Design Research. The Center for Real Estate and Urban Economics conducts research in real estate and land economics, supported by appropriations allocated by the State Legislature from the Real Estate Education Research and Recovery Fund. The staff of these centers includes University faculty and graduate student research assistants.
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.

The requirements for the degree include the study of English and of a foreign language. These are to be completed early in the college years 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. The breadth requirements involve exploration in several broad areas of knowledge: the humanities, to deepen appreciation for language, literature and the arts; the natural sciences, to explore the structure of living and nonliving matter and the environment of man; the social sciences, systemically to study the individual and social behavior of human beings. The student's major program may be pursued within a single department, or it may combine a related series of courses in two or more departments. A well-qualified student may, with support of a member of the faculty of the College and with permission of the Dean, design an individual major program to suit his special objectives.

Special Programs  The Experimental Collegiate Program organizes the educational life of the student around the study of significant themes and related problems. The program covers two years, and focuses attention on Greece during the Peloponnesian Wars, on England during the Civil War and the Restoration, and on America during the Revolution and contemporary times. The program includes material which satisfies the College requirements in reading and composition, humanities, and social sciences, as well as the University requirements in American History and in American Institutions. The work in each quarter is equivalent to 12 units of degree credit. Each beginning class admits 150 freshmen.

The Residential Program in History and Literature is offered to students who wish to associate their academic program with a living group. The freshman year includes several regular University courses, some of which are taught in the Mitchell-Peixotto residence halls. It also includes a freshman seminar which,
depending on the topic, may be of one, two or three quarters' duration. The central feature of the curriculum is the sophomore course (10 units each quarter), which concentrates on the study of great novels and the relation of them to the history and culture of the period in which they were written, with emphasis on the period of the Industrial Revolution in Europe. Many of the works are studied, according to the student's proficiency, in the original languages of French, German, or Spanish. The 30 units of this course satisfy the humanities breadth requirement and one course for the social science breadth requirement.

Admission Requirements for admission are listed on page 15 of this catalogue. Students are reminded that the total enrollment in the University of California at Berkeley is limited to 27,500 students. Therefore, some eligible students may be requested to reapply at another campus of the University. Freshman students are asked to indicate a tentative major subject or field, and to consult with the College advisers and faculty advisers as their interests develop and change. Students admitted in junior standing must declare a major and should have completed the English and foreign language requirements of the College, as well as courses required as preparation for the declared major. Admission to junior standing in a major is contingent on the availability of places in the major.

Classification of Students Regular students are classified as freshman, sophomore (upon completion of 45 units), junior (upon completion of 90 units), or senior (upon completion of 135 units). Special and limited-status students are described in Chapter I on page 20. These students, under direct supervision of the Dean of the College, must have their study lists approved in his office, 215 Moses Hall, each quarter.

Preparation for Admission to Professional Schools A student enrolled in the College who plans to transfer to a professional school, either on the Berkeley campus or elsewhere, should consult the Announcement of the school of his choice as early as the beginning of his freshman year and plan his program to meet the admission requirements; however, while he is enrolled in the College he is held to the College requirements, including reading and composition and foreign language. He must enroll in these courses even if they are not required for admission to the professional school. If enrollment in the College of Letters and Science is continued beyond the end of the sophomore year, the student must apply for and gain acceptance in a major for the A.B. degree in the College. All subsequent programs must apply toward completion of that major.

Summary of Requirements for the A.B. Degree The requirements of the College of Letters and Science are given here only in brief. For details please consult the Announcement of the College of Letters and Science, available at the College Office in 215 Moses Hall.

Unit Requirement The student must complete 180 units. Of these, 162 must be in courses on the Letters and Science List (see page 91); 54 of the 162 units must be in upper division courses, and at least 9 of the 54 units must be outside the student's major department. Eighteen units outside the list are per-
mitted, under certain limitations. After 105 units toward the A.B. degree have been earned in all institutions attended, no further unit credit may be earned in a junior college, although appropriate courses will be accepted for subject credit toward completion of breadth requirements.

Scholarship Requirement Candidates for the A.B. degree must have at least a C average in (1) all courses undertaken in the University; (2) all courses in the major program; and (3) all upper division courses in the major program. For regulations concerning passed or not passed enrollment, see the Announcement of the College of Letters and Science.

General University Requirements These are Subject A, American History and American Institutions, and are described in detail on page 31.

Reading and Composition Two courses.

Foreign Language The fourth course in a foreign language, or the equivalent.

Breadth Requirements Four courses in each of the following areas: humanities, natural science, social science.

Major Requirements Courses in and related to the major subject or subjects totaling at least 45 units but not exceeding 90 units.

Major Programs These are listed in the Announcement of the College of Letters and Science. There are forty-seven departmental programs, ranging from Altaic languages to zoology; group majors in communication and public policy, genetics, and social welfare; and field majors in humanities, biological sciences, physical sciences, and social sciences. In addition, a well-qualified student 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.

Honors

The Honor List This list is published each quarter, and includes all students who have completed at least one quarter and at least 12 units with letter grades in the College of Letters and Science, with a grade-point average of at least 3.00 on all work undertaken in the College. Students on the Honor List are designated “honor students.” The notation “honor student” appears on a student’s Berkeley record after the grades for each quarter in which his name has appeared on the Honor List.

Departmental Honors Programs A description of each honors program follows the description of the major program in this catalogue. A student on the Honor List may, upon approval of his adviser, enroll in the honors program in his major at any time up to the first term of his senior year. In special cases, a student not on the Honor List may also obtain approval of the adviser and the Dean to enroll in the honors program.

For a student who successfully completes an honors program, the department or committee in charge of the major will recommend inclusion of a notation on

* The 18 units may include not more than 9 units in courses numbered 300–499, and not more than 6 units in physical education activity courses.
the diploma, on the List of Certificates, Degrees, and Distinctions, and on his Berkeley record when he graduates. The notation will read, "Honors Program Completed in the Major," and, when appropriate, "with Distinction" or "with Great Distinction" will be added.

**Distinction in General Scholarship** To be considered for distinction in general scholarship, a student must complete a minimum of 90 units on the Berkeley campus with passing grades. This figure includes courses completed in the University of California Education Abroad Program by students enrolled at Berkeley before entering the program. If the student achieves a minimum grade-point average of 3.70 on his Berkeley record, and also achieves this grade-point average on all courses attempted, including courses undertaken elsewhere which have been used in determining his grade-point average for admission to the University, the notation "Great Distinction in General Scholarship" will appear on his diploma, on the List of Certificates, Degrees, and Distinctions, and on his Berkeley record when he graduates. If the minimum grade-point average is 3.30, determined as explained above, the notation "Distinction in General Scholarship" will appear. Departments and committees in charge of major programs may recommend that students be considered for distinction or great distinction in general scholarship. This award is in addition to any awards for participation in honors programs.

**Letters and Science List of Courses**

At least 162 units, including at least 54 units in *upper division* courses, offered for the degree of Bachelor of Arts must be in courses chosen from the Letters and Science List of Courses.

Lower division courses offered in the departments of Naval Science, Military Science and Aerospace Studies will be accepted as equivalent to courses on the Letters and Science List up to a maximum of 12 units.

Any course not included on the Letters and Science List of Courses, but required, or accepted as part of a major shall, for students offering that major at graduation, be treated as if it were on the Letters and Science List of Courses.

- Agricultural Economics: 23, 100A, 100B, 112A, 112B, 120, 175.
- Anthropology: all undergraduate courses.
- Art: all undergraduate courses.
- Astronomy: all undergraduate courses.
- Atmospheric and Space Sciences: all undergraduate courses.
- Bacteriology and Immunology: all undergraduate courses.
- Biochemistry: all undergraduate courses.
- Biology: all undergraduate courses.
- Botany: all undergraduate courses.
- Business Administration: 100, 110, 111, 150, 154.
- Chemistry: all undergraduate courses except 125.
- City and Regional Planning: all undergraduate courses.
- Classics: all undergraduate courses.
- Comparative Literature: all undergraduate courses.
- Computer Science: all undergraduate courses.
- Demography: 100, 120, 130.
- Design: all undergraduate courses.
- Dramatic Art: all undergraduate courses; a total of not more than 12 units from courses 49 and 190 will be accepted as Letters and Science credit.
- Economics: all undergraduate courses.
- Education: 110, 192, 193, 194.
English: all undergraduate courses.
English for Foreign Students: all undergraduate courses.
Environmental Design: 169, 170, 171, 172, 175, 177.
Forestry and Conservation: 10, 115, 116, 122, 123, 124, 125, 173, 175, 177.
French: all undergraduate courses.
Genetics: all undergraduate courses.
Geography: all undergraduate courses.
Geology and Geophysics: all undergraduate courses.
German: all undergraduate courses.
Greek: all undergraduate courses (see Classics).
History: all undergraduate courses.
Humanities: all undergraduate courses.
Italian: all undergraduate courses.
Journalism: all undergraduate courses.
Latin: all undergraduate courses (see Classics).
Linguistics: all undergraduate courses.
Mathematics: all undergraduate courses.
Medical Physics: all undergraduate courses.
Molecular Biology: all undergraduate courses.
Music: all undergraduate courses.
Natural Science: 1A, 1B, 1C.
Near Eastern Languages: all undergraduate courses.
Optometry (see Physiological Optics).
Oriental Languages: all undergraduate courses.
Paleontology: all undergraduate courses.
Philosophy: all undergraduate courses.
Physics: all undergraduate courses.
Physiological Optics: 101, 102, 132, 151, 160.
Physiology and Anatomy: all undergraduate courses.
Plant Nutrition: 115, 117 (see Soils and Plant Nutrition).
Political Science: all undergraduate courses.
Psychology: all undergraduate courses.
Rhetoric: all undergraduate courses.
Sanskrit: all undergraduate courses (see Linguistics).
Scandinavian: all undergraduate courses.
Slavic Languages and Literatures: all undergraduate courses.
Social Science: all undergraduate courses.
Sociology: all undergraduate courses.
Soil Science: 10, 10L, 100, 101, 110, 111, 112, 113 (see Soils and Plant Nutrition).
Spanish and Portuguese: all undergraduate courses.
Statistics: all undergraduate courses.
Zoology: all undergraduate courses.

**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 and government. Opportunities for specialization are provided for students preparing for such fields as accounting, applied economics, finance, marketing, operations research, organizational behavior, and production management.

**Admission**

Freshmen and sophomores preparing to enter the School of Business Administration as juniors, must include the following subjects in their liberal arts program:
English 1A–1B or Rhetoric 1A–1B or Comparative Literature 1A–1B or Dramatic Art 1A–1B.

One additional course in English or Rhetoric or Comparative Literature or Dramatic Art.

First course in Analytic Geometry and Calculus. This may be met by Mathematics 1A or 16A. Mathematics 190A should be taken by juniors to meet this requirement. (Students planning to enter the graduate program in business administration are urged to take the full sequence of one of the following: Mathematics 1A–1B–1C or Mathematics 16A–16B–16C or 190A–190B–190C.)

One course in statistics chosen from Statistics 2 or 16 or 20. Upper division statistics may be taken by juniors to fulfill this requirement.

A minimum of three quarters or two semesters in one foreign language is required for all liberal arts students.

Four courses in natural science are required for graduation. Two of these are the mathematics and statistics requirements listed above.

Two courses in basic economic theory, Economics 1A–1B. This is required for all students.

Two courses in behavioral science must include either Psychology 1 or Sociology 1 and one additional course chosen from the departments of psychology, sociology or anthropology.

Principles of Accounting, Business Administration 1 and 2.

Applicants from the University must present a grade-point average of 2.0 or better on all courses in the lower division. Others should see Chapter I of this catalogue for advanced standing admission requirements.

Students entering the School of Business Administration with junior standing in professional fields such as engineering and environmental design, will follow a lower division course of study different from that outlined and should consult the Associate Dean of the School in 310 Barrows Hall for further information.

The following are additional breadth requirements for students transferring with junior standing in liberal arts.

Additional language two courses. This is satisfied by (a) language or courses related to the language used for admission; (b) courses in mathematics or statistics beyond those required for admission; (c) a combination of the first two alternatives. Note that if a foreign language is offered, it must be a continuation of the one used to satisfy the admission requirement.

Two additional courses of natural science unless satisfied in freshman and sophomore courses as above.

Three courses of additional social science, chosen from: agricultural economics, cultural anthropology, economics, economic geography, history, political science, psychology, and sociology.

**General Requirements for the Degree**

To obtain the degree of Bachelor of Science in Business Administration, a student must have completed 180 quarter units (including at least 60 units in upper division academic courses) with a C average or better, and with a minimum C average in all advanced business administration courses. Senior residence requirements are as follows: After 135 units toward the bachelor’s degree have been credited, at least 36 of the remaining units must be completed in residence in not less than three quarters in the School of Business Administration. At least two of the final quarters must be consecutive. All students must fulfill general University requirements (including Subject A and American History and Institutions, discussed in Chapter II).
The program in Business Administration is described in the course section of this catalogue. For detailed information about fields of emphasis, etc., please consult the Announcement of the School of Business Administration.

Courses Stressing Quantitative Methods

A number of courses are available in which the use of mathematical and statistical methods is stressed. A student interested in such courses should prepare himself by including in his lower division preparation Mathematics 1A–1B–1C and Statistics 20, or their equivalents. Additional mathematical preparation, including linear algebra, is highly recommended. Students should consult the Associate Dean of the School for further advice in planning a lower division program.

Graduate Study

The Graduate School of Business Administration, established in August, 1955, 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.

Students who wish to prepare for high-level research positions in business and government, or for academic careers at the university or college level, may pursue a program leading to the Ph.D. in business administration.

For detailed information, consult the Announcement of the Graduate School of Business Administration and Chapter III of this catalogue.

Facilities and Opportunities

Library  In addition to the unusually complete collection of trade journals, business periodicals and statistical publications located in the Main Library, students in Business Administration also have access to the Hans Kelsen Graduate Social Science Library in 30 Stephens Hall.

Alumni Association  Graduates of the School of Business Administration and the Graduate School of Business Administration continue an active interest in and support of the Schools, students, and fellow alumni through membership in the California Business Administration Alumni Association.

Student Organizations  Scholastic and professional fraternities, student chapters of the American Marketing Association, the Society for the Advancement of Management, and University clubs and societies offer many activities for the student in Business Administration to enrich his life, both on campus and in later years.

Financial Aid  In addition to general University scholarships (described in Chapter IV), certain financial aids are also available to students in the School of Business Administration. These include scholarships, grants-in-aid, and prizes. These are normally awarded, without application, on the basis of scholastic merit. A limited number of loans is available through the School of Business
Administration. Application may be made to the Associate Dean of the School, 310 Barrows Hall.

Graduate students in Business Administration are directed to the Office of the Graduate School of Business Administration, Room 350, Barrows Hall, for information about grants-in-aid, fellowships, assistantships, and readerships. In addition, loan funds in limited amounts are available through the Office of the Associate Dean of the Graduate School of Business Administration.

**SCHOOL OF CRIMINOLOGY**

The School of Criminology offers a broad range of studies in the nature, causes, and prevention of crime. The School's program falls into two main areas of emphasis: the first, general criminology, draws upon the concepts and methods of the social and behavioral sciences for an understanding of the economic, political, psychological, and sociological factors behind crime; the second, criminalistics, is concerned with the application of the natural sciences to law enforcement and crime investigation. The first program leads to a Bachelor of Arts degree, the second, to a Bachelor of Science degree, on the undergraduate level. Both lead to the M.Crim. and D.Crim. on the graduate level.

**Undergraduate Admission**

Students are admitted in the junior year, after completion of a 90-unit lower division precriminology curriculum. This normally consists of the following subjects:

**Basic Program (All Students)**  English 1A–1B, or other reading and composition course; Modern Foreign Language—equivalent of 3 quarters; 2 quarter courses from Social Science 1A–1B, Sociology 1 or 10, another sociology course; Psychology 1 (or upper division psychology course in personality, social pathology or development).

**Social Science Emphasis (Criminology)**  Political Science 1 or 5, and 2; or upper division course in political science; Psychology 3 (or upper division psychology course in personality, social pathology or development); one course from Psychology 5, Education 119A, Public Health 162A, or Statistics 130A; natural science, 4 courses including one of the following: Physiology 1, Zoology 10, Genetics 10, Biology 1A–1B–1C, 11A–11B; humanities electives, four courses.

**Natural Science Emphasis (Criminalistics)**  Chemistry 1A–1B–1C, 5, and 12A–12B; Physiology 1; Physics 6A–6B–6C; Mathematics 1A or 11A; Statistics 20; humanities electives, 5 units.

All of the above courses count toward the School's requirements for the bachelor's degree. The natural science and humanities electives may be chosen from any of those courses acceptable as breadth requirements in the College of Letters and Science—consult the ANNOUNCEMENT OF THE COLLEGE OF LETTERS AND SCIENCE for a list of these courses. (Students at other campuses or institutions should consult with their faculty advisers concerning appropriate course equivalents.) To be admitted to the School's upper division program, a student must present a grade-point average of 2.0 or better.
Program in Criminology

The student in criminology must complete a total of 180 quarter units (including the precriminology curriculum outlined above), with 36 units in basic criminology courses and the balance in elective courses chosen from Criminology and other schools and departments. The student may take courses in the etiology of crime, in police and penal administration, in criminal law, in the prevention and control of juvenile delinquency, and in the criminalistics field. Specific course requirements and recommended electives are given in the Announcement of the School of Criminology.

Program in Criminalistics

The student in criminalistics must complete a total of 180 quarter units (including the precriminology curriculum), with 47 units in the criminalistics program, 9 units of required courses in other schools and departments, and 34 units of recommended electives chosen from Criminology and other schools and departments. He may take courses in criminal law, criminal investigation, scientific methodology, forensic medicine, biochemistry, microanalytical techniques, and several other topics. Specific course requirements are given in the Announcement of the School of Criminology.

Graduate Study

Students are normally admitted in the fall quarter for study leading to the Master of Criminology and the Doctor of Criminology. Students who have completed a bachelor's degree in the School should be able to complete the requirements for the M.Crim. degree within a year and for the D.Crim. degree within three years. Other students may require a somewhat longer period of study.

The graduate curricula are intended to give a broad range of preparation for teaching and research, and yet allow each student sufficient freedom to explore a field of specialization. The student works under the supervision of a graduate adviser who approves his program and guides his research. Specific requirements for higher degrees are presented in the Announcement of the School of Criminology.

Student Activities and Opportunities

The School of Criminology is characterized by an active concerned student body. Graduate and undergraduate students serve on faculty committees which concern themselves with such matters as curriculum, careers, student activities and administration. There are organized graduate and undergraduate associations which sponsor events ranging from social gatherings to field trips and public lectures. Graduate students publish the scholarly journal, Issues in Criminology, which presents papers on important issues in the profession.

There are opportunities for financial aid, including the August Vollmer Memorial Scholarship Fund for undergraduates, the NIMH Intern Fellowships for graduates, and the LEAA loan and grant program for both. For further information, consult the Announcement of the School of Criminology.
The School of Education prepares scholars competent to teach, conduct educational research, develop, disseminate, and implement educational programs, and to administer a variety of services relevant to educational institutions. The School's purpose is to implement high professional standards among those preparing to engage in educational service, and to encourage continuing speculation and research on the nature, role, methods, and problems of education in modern society. The School 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 (Ed.D.), for those interested in teaching in college and university departments of education, or in carrying on research in the field of education.

Admission

An applicant to any program of the School of Education must be admitted to the Graduate Division. Those who plan to enter teacher education programs should confer with an adviser in the Credentials Office, 1615 Tolman Hall, early in their University careers, because the credential programs involve specific courses to be completed during the undergraduate years. Further details concerning requirements for admission are contained in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION.

Degrees and Credentials

The following is a brief outline of the degrees and credentials for which the School of Education offers preparatory curricula.

Teaching Credential  The holder of a State teaching credential is qualified for service in the public schools of California. A candidate for this credential must hold a bachelor's degree, with a major and a minor in a teaching field (not education). The teacher education program at Berkeley normally comprises one postgraduate year following receipt of the bachelor's degree, during which time the student takes basic courses in education, obtains actual teaching experience in a public school, and takes further courses in his major or minor field.

Other Credentials  In addition to the teaching credentials, course work is offered in the School of Education for the following credentials: Administration, Supervision, and Pupil Personnel Services.

Higher Degrees  Curricula are offered in the School of Education for the following degrees:

The M.A. program involves broad training in education, with specialization in selected areas.

The Ph.D. program requires original research leading to the contribution of significant ideas to the field of education.

The Ed.D. (Doctor of Education) degree is conferred in recognition of a candidate's command of a comprehensive body of academic and professional knowl-
edge, and of his ability to organize and carry out investigation of significant problems in the field of education.

For further details of the requirements and areas of specialization for all credential and degree programs in education, consult the Announcement of the School of Education.

Facilities and Opportunities

The faculty of the School of Education is engaged in continuing research and service in many phases of education. Much of this activity is financed by grants from the federal government and private foundations. Opportunities are open to students in the School of Education for participation in research and service, and for financial assistance.

The facilities and opportunities in the School of Education include:

Education Field Service Center—offering service to public school systems and assistance in solving practical problems of education.

Educational Media Laboratories—containing facilities, equipment and materials pertinent to instruction and to research in education.

Financial assistance—a limited number of opportunities are available through the School of Education including special scholarships for teaching credential candidates; teaching fellowships and assistantships; research and service assistantships; teaching and administrative internships.

University Extension University Extension offers a broad and varied program of courses on campus and in communities throughout California. Some extension courses may, on approval, be applied toward the bachelor’s degree and certain credentials. Through University Extension, the School of Education offers a graduate internship program for preparation of secondary school teachers. University Extension frequently co-sponsors special conferences on educational problems.

School of Forestry and Conservation

The School of Forestry and Conservation offers undergraduate and graduate programs designed to prepare students for general forestry, wood science and technology, and other phases of the conservation of the resources of wildlands. Since 1914, when the first forestry curriculum was offered on the Berkeley campus, more than 1,700 students have been graduated from the School. They have exercised strong leadership in the management of public and private forests and other wildlands in California and throughout the nation. The undergraduate major in general forestry is the only professional forestry program offered in the state which is accredited by the Society of American Foresters; the School also offers the only programs in the state leading to the graduate professional degree, Master of Forestry. Similarly the graduate programs leading to the Ph.D. in forestry or in wood science and technology are unique in the state.

The programs of the School in general forestry are oriented to the management of the resources of forested and wildlands. They provide opportunity for concentration in such fields as timber management, range management, wild-
life habitat management, or recreational land management, as well as for specialization in particular disciplines such as forest ecology, forest economics, forest soils, or forest genetics. The programs in wood science and technology are oriented to an understanding of wood and enable specialization in wood mechanics, wood physics, wood chemistry, wood anatomy, or wood processing.

**Undergraduate Programs**

**Admission** Students are admitted to the School of Forestry and Conservation following completion of the sophomore year. The preparatory program of the freshman and sophomore years may be completed either at Berkeley or at any other accredited collegiate institution. At Berkeley the preparatory program is offered through the College of Agricultural Sciences.

Applicants for the undergraduate curriculum must meet general University requirements for admission as described in Chapter I. The prospective forestry student should include in his high school program the following subjects: algebra (2 units), plane geometry (1 unit), trigonometry (½ unit), mechanical drawing (½ unit). Two units of laboratory science (preferably chemistry and physics) are strongly recommended.

The undergraduate curriculum includes two majors, one in general forestry and the other in wood science and technology. Students seeking admission to the upper division curriculum must satisfy the following conditions: (1) admission to the University; (2) completion of at least 84 quarter units of acceptable courses; (3) a grade-point average of 2.0 or better for all college courses undertaken; (4) satisfaction of the subject matter requirements for the desired major as outlined below. Students satisfying all conditions for admission except for a limited number of subject matter requirements should consult the School as to their eligibility.

**Major in General Forestry** The preparatory program as offered through the College of Agricultural Sciences at Berkeley includes the following courses (units in parentheses) in satisfaction of the subject matter requirements for this major:

- Biology 1A–1B–1C (15)
- Chemistry 1A–1B (8)
- Economics 1 and 3 (9)
- Civil Engineering 21 (4)

- Rhetoric 1A–1B (10) or Mathematics 16A–16B (8)
- English 1A–1B (10) or Physics 6A–6B (8)
- Comp. Lit. 1A–1B (8) or Statistics 20 (4)
- Geology 10 (4) or Electives (20 or 22)

Programs taken at other collegiate institutions should approximate these courses as closely as possible. Information as to the specific minimum requirements for this major is available in the ANNOUNCEMENT OF THE SCHOOL OF FORESTRY AND CONSERVATION.

The summer field program is prerequisite to the balance of the upper division courses in the general forestry major and should be completed during the summer immediately following completion of the sophomore year. This ten-week program consists of 15 units of course work (courses 100A–100B–100C–100D). The work is offered only at the U. C. Forestry Camp, Meadow Valley, Plumas County.

The upper division program following completion of the summer field pro-
gram is distributed as follows: upper division botany and soil science (8 units); required courses in forestry (34 units); approved elective plan (48 units).

The elective plan permits the student to develop a field of concentration within or related to forestry, such as the management of wild lands, range management, wildlife management, recreational land management, or preparation for specialization at the graduate level, and also provides opportunity for breadth in education.

Before being granted the Bachelor of Science degree, the student majoring in general forestry must satisfy the following conditions: (1) completion of general University requirements (see page 31); (2) completion of at least 195 units of University work (including not more than 6 of these units in lower division physical education courses); (3) satisfaction of the subject matter requirements of the major; (4) at least a 2.0 grade-point average in all courses undertaken while in the School.

**Major in Wood Science and Technology**  
The preparatory program as offered through the College of Agricultural Sciences at Berkeley includes the following courses (units in parentheses) in satisfaction of the subject matter requirements for this major:

- Botany 10 (4)
- Chemistry 1A-1B-1C (12)  
- Mathematics 1C-12A-12B (12)
- Physics 4A-4B-4C-4D-4E (19)
- Chemistry 12A-12B (10)  
- Humanities and Social Science (15)
- Mathematics 1A-1B-1C (12)  
- Electives (6)

Programs taken at other collegiate institutions should approximate these courses as closely as possible. Information as to the specific minimum requirements for this major is available in the **Announcement of the School of Forestry and Conservation**.

The upper division program is distributed as follows: required courses in forestry (27 units); other required courses (20 or 21 units); technical electives (15 to 21 units); nontechnical electives (21 to 28 units).

The technical electives permit the student to develop a field of concentration in an area relevant to wood science and technology. The nontechnical electives provide for breadth in education.

Before being granted the Bachelor of Science degree, the student majoring in wood science and technology must satisfy the following conditions: (1) completion of general University requirements (see page 31); (2) completion of at least 180 units of University work, including at least 54 units in upper division courses and not more than 6 units in lower division physical education courses; (3) satisfaction of the subject matter requirements of the major; (4) at least a 2.0 grade-point average of all courses undertaken while in the School.

**Graduate Programs**

Various graduate programs in wildland resource science, in forestry, in range management, and in wood science and technology are available through the School of Forestry and Conservation. Students may be admitted to these programs on the basis of scholastic promise and undergraduate preparation either in forestry or in various related fields of study. These programs are summarized below. For full details, please see the **Announcement of the School Of**
Forestry and Conservation or consult the Graduate Adviser, 145 Mulford Hall.

Master of Forestry Program The M.F. degree is a professional degree representing completion of advanced academic preparation for a career in the practice of forestry. The program involves at least a year of study and is designed to broaden a student's grasp of forestry principles and to increase his ability to apply the principles to selected professional problems. The core of the program consists of analysis and evaluation of a number of case studies. Requirements for the degree include residence in the School for at least three quarters; maintenance of a 3.0 grade-point average in at least 36 units of prescribed coursework; preparation of a satisfactory professional paper; and passage of an oral comprehensive examination.

Master of Science Programs The M.S. in forestry provides a program for qualified students interested in a specialized aspect of forestry in terms either of research or administrative duties within this specialization. Specialization is possible in fields such as tree physiology, forest soils, silviculture, photogrammetry, mensuration, or forest economics. The M.S. in range management, which is administered by an interdepartmental group, provides for specialization in the scientific basis of range management and in the ecology of 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.

Doctor of Philosophy Programs Programs leading to the Ph.D. degree are available as follows: (1) in wildland resource science; (2) in sciences related to wildland resources such as agricultural economics, botany, entomology, genetics, plant pathology, plant physiology, soils, and zoology; (3) in wood science and technology; and (4) in sciences related to range management. The faculty is highly active in research and has developed facilities which enable doctoral candidates to attack a wide variety of problems.

Facilities and Activities

Teaching Facilities Mulford Hall contains workrooms for dendrology and wood technology; laboratories; statistical and drafting workrooms; extensive herbarium and wood collections; and a forestry library. The Berkeley campus contains specialized forestry facilities such as greenhouses, nursery areas, and the 160-acre Strawberry Canyon.

Forest Land The UC Forestry Camp, located near Quincy in the Sierra Nevada, is the site of the ten-week summer field program. The 2,860-acre Blodgett Forest, located in El Dorado County, is a well-stocked young-growth forest of pine and fir; it is the site of active research by faculty and graduate students. Other smaller properties are also administered by the School.

Forest Products Laboratory Located at the Richmond Field Station, this unit conducts organized research in wood chemistry, pulp and paper, wood physics, and related applications of wood science and technology. Its extensive modern facilities allow investigation of a wide range of problems and topics.
Sagehen Creek Wildlife and Fisheries Station  This station, located at an elevation of 6,500 feet, 12 miles north of Truckee, California, was developed for year-round basic field research in ecology by faculty members and graduate students. The main problems under study are concerned with cycles in game animals, birds, and fishes, with special effort being directed toward the study of the causes of winter mortality in fishes. The facilities are available for other ecologic studies as well.

Wildland Research Center  A part of the Agricultural Experiment Station, this unit enables the School of Forestry and Conservation to participate with other departments in research in forestry, watershed protection, wildlife management, range management, recreation, and other aspects of wildland resource use.

Student Organizations  The Forestry Club, established on the Berkeley campus in 1912, is the focus of student activities in the School. The Club meets at monthly intervals for technical programs, and conducts organized social, athletic, and other extracurricular activities. Members of the Club edit and publish the student annual, Timber.

Theta Chapter of Xi Sigma Pi, the national honorary forestry fraternity, is located at the School. This group provides counseling services for students, sponsors discussions on topics of current interest, and promotes student academic achievement.

Financial Aids  Students interested in financial aids are referred to the information for undergraduates and graduates on pages 68 and 52. A limited number of financial aids are available only to forestry students. For details, graduates should consult the Committee on Fellowships and Graduate Scholarships; undergraduates should consult the Committee on Undergraduate Scholarships.

The Walter Mulford Loan Fund is available to students in forestry, especially those in need of assistance in connection with the Summer Field Program. Information concerning this Loan Fund may be obtained from the Dean, School of Forestry and Conservation, 145 Mulford Hall.

SCHOOL OF JOURNALISM  The Graduate School of Journalism offers a two-year program leading to the degree of Master of Journalism (M.J.). The program is intended for persons who wish to become working journalists. It 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.

Undergraduate Program  An individual major in journalistic studies is available to honor students of junior standing as part of the Bachelor of Arts program within the College of Letters and Science. The individual major consists of at least 45 units, including six or seven courses in journalism and three or four related courses. Admission
to the major is upon petition to the Dean of the College of Letters and Science following consultation with an adviser from the Graduate School of Journalism.

Courses offered at the undergraduate level seek to impart knowledge about journalism rather than to provide intensive training in the practice of journalism.

**Graduate Program**

A candidate for the Master of Journalism degree shall have completed six quarters in graduate study in journalism and related disciplines. This requirement may be modified, however, in cases where students possess special academic or professional qualifications.

The candidate shall have completed 42 units of approved upper division or graduate courses, including not less than 20 units in graduate courses in journalism, and shall have presented an acceptable thesis or reporting project.

A student generally will take about half of his courses in journalism and half in a related field of specialization. Variations are possible, however, and programs are designed to fit the needs of the individual student.

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

**Facilities**

The School of Journalism is located in Sproul Hall, with its administrative office in Room 318. Facilities include a library and reading rooms, typing rooms, seminar rooms, a commons room, a photographic darkroom, and a television film-editing room. Broadcast production equipment includes cameras, tape recorders and film projectors. The School also makes use of the videotape facilities in the campus Television Office.

**SCHOOL OF LAW**

The School of Law on the Berkeley campus of the University of California had its inception in 1882 when an instructor in Latin at the University offered a course in Roman Law. The number of courses grew and, by 1903, professional degrees were granted. Then, in 1912, The Regents established a separate School of Law (The School of Jurisprudence, 1912–1950) in its own building on campus. The building was financed principally through contributions in honor of Judge John H. Boalt and "Boalt Hall" became the popular name not only for the building but for the school itself. In 1951, the School moved into the present building. Today, Boalt Hall has a broad three-year curriculum leading to the J.D. degree and a postgraduate program for students working toward the LL.M. and J.S.D. degrees.

The aim of the School is not only to prepare students to practice law, but also to develop the scientific study of law and to further 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.

**Preparation for the Study of Law**

Experience has shown that students from diverse educational backgrounds do equally well in law school and later in practice. As a result, there is no single "pre-law" major required or even recommended. However, for those students still in a position to structure their curriculum the following are suggested: (1) Learn to write. Take courses in which your work will be vigorously edited. (2) Enroll in courses demanding analytical skills. (3) Obtain some breadth in humanities and social sciences. A good lawyer must understand the social context within which legal problems arise. (4) Acquire a general understanding of the business world. A significant portion of legal problems is related to the business community. In selecting specific courses to fulfill these recommendations, consult your undergraduate adviser. The ability to use a typewriter is also useful to a lawyer or law student.

It should be emphasized, however, that a student should not be deterred from pursuing the study of law merely because his undergraduate education has not been focused on the areas suggested above. The law school selects its students from a wide variety of backgrounds and training. This diversity itself enhances and enriches the legal experience of all the students.

**The Law Curricula**

**Professional Curriculum** The professional curriculum of the School of Law leads to the degree of Juris Doctor (J.D.). It is designed for full-time students only and requires six semesters for completion. The School of Law does not offer a part-time or evening program. New students are admitted only at the beginning of the fall semester.

The work of the first year is prescribed; the work of the second and third years is elective. Courses in the curriculum are listed elsewhere in this catalogue.

**Graduate Curriculum** The student who desires (1) to broaden his professional education by study of legal history, international and comparative jurisprudence, or the relations of law and other social sciences, or (2) to supplement his professional education by study of special subjects (e.g., taxation, labor law, international law, marital property, procedure, corporations), or (3) special training in preparation for law teaching, legal research, government service, or legislative drafting, may apply to become a candidate for the degree of Master of Laws (LL.M.) or the degree of Doctor of the Science of Law (J.S.D.).

**Admission Requirements**

**Admission to the Professional Curriculum** Applicants for admission to the professional curriculum of the School of Law must have received a bachelor's degree or an equivalent degree from a college or university of approved standing.

Applicants will be considered primarily on the basis of their potential ability to complete satisfactorily the course of study required for graduation from Boalt Hall, as measured by their undergraduate average and scores on the Law School Admission Test.
In appraising a student's undergraduate average, his average in the work of the last two prelegal years will generally be considered more heavily than that of his earlier college work. Usually, a grade B (3.0) average is a minimum prerequisite for admission to the law school.

Account may also be taken of a student's potential for public leadership or for exceptional accomplishments. Some applicants may be asked to come to the School for personal interviews before admission is granted.

The Law School Admission Test, administered by the Educational Testing Service, is required of all applicants for admission to this School. Applicants should write to Law School Admission Test, Educational Testing Service, Princeton, New Jersey 08540, requesting an application blank and bulletin of information listing places where the test may be taken and the dates on which the test will be given. At the applicant's request, his score will be reported not only to this law school, but also to other law schools where he may be applying for admission. He will also receive an individual score report directly from the Educational Testing Service.

Applications for admission to the School of Law for the fall term, 1970, must be filed by April 1.

**Admission to Advanced Standing**  Applicants who have completed at least one year of work in another law school may be admitted to the second year of the professional curriculum with credit for not more than one year of such work if (1) before undertaking the study of law the applicant had received a bachelor's degree, or an equivalent degree from a college or university of approved standing, (2) the work has been completed in a full-time day program of study at a school which is a member of the Association of American Law Schools, and (3) the work for which credit is sought has been of superior quality. The faculty reserves the privilege of prescribing further conditions for the granting of such credit and may, at its discretion, require examinations in subjects for which credit is sought. To be assured of satisfactory programs, students transferring from other law schools should plan to enter at the opening of the fall term.

Students who have been disqualified at another law school will not be admitted to this School.

**Admission to the Graduate Curriculum**  Admission to the graduate curriculum, as a candidate for either the LL.M. or the J.S.D. degree, may be granted to any applicant who holds a professional degree from an approved law school and who, in the opinion of the faculty, gives satisfactory evidence of capacity to complete the requirements for the degree; except that an applicant who has not received the A.B., B.S., or equivalent degree may be admitted only if the faculty concludes that his preparation in social sciences other than law has not been unreasonably limited. An applicant's capacity to complete the degree requirements generally must be evidenced by an academic record of distinguished past performance, although in appropriate cases admission as a degree candidate may be granted, at the discretion of the faculty, if there is other sufficient indication of such capacity.

At the discretion of the faculty, admission to the graduate curriculum, though not as a candidate for a degree may also be granted in an appropriate case to
an applicant who holds a professional degree from an approved law school and
who, in the opinion of the faculty, gives evidence of capacity to continue ad­
vanced legal study successfully. An applicant so admitted may, after completion
of one academic year of resident study, depending on his achievement and
proved ability, be admitted as a candidate for the LL.M. or J.S.D. degree.
If the previous training of an applicant for admission to the graduate cur­
riculum has been received in foreign educational institutions, he must present
satisfactory evidence that his preparation and his capacity to undertake gradu­
ate study in this country are substantially equivalent to the requirements for
graduates of an American college or university.

Law Building Complex

From 1911 until 1951 the School occupied Boalt Hall of Law, built as a
memorial to Judge John H. Boalt with funds provided by his wife, Elizabeth
Josselyn Boalt, supplemented by gifts from California lawyers. In 1951, the
School’s activities, as well as the name “Boalt Hall,” were transferred to the
present building. The new quarters accommodate a greatly increased student
body through enlarged classrooms, library reading room, and other facilities
requisite to a modern law school. Special provision also has been made for
student study carrels, typing areas, Law Review quarters, and lounges. In addi­tion,
a courtroom, the Luke Kavanagh Room, has been made possible through
the estate of the late Luke Kavanagh, for many years a San Francisco court
reporter.

The law complex was enlarged in 1967. The addition includes the Earl
Warren Legal Center with an auditorium, research and conference rooms, a
high-rise dormitory and dining room for law students, and additional classroom,
library and office space. Funds for the Center and dormitory were contributed
by Boalt Hall alumni, foundations, The Regents of the University of California
and friends of the School to provide facilities for research projects, institutes and
conferences.

The Law Library

The Garret W. McEnerney Law Library is named after the late Regent Mc­
Enerney of San Francisco, from whose estate a substantial portion of the building
funds were derived. The library contains one of the largest collections of legal
materials in the country, housing at present over 235,000 volumes. It provides
not only the materials required by the students for professional studies, but also
the resources required by faculty and members of the bench and bar for legal
research.

The library contains substantially complete collections of Anglo-American
case and statute law. Extensive holdings of American and English legal period­
cicals are available, including all law reviews published in the United States. The
international legal library at Boalt includes more than 40,000 foreign mono­
graphs and an outstanding collection of foreign periodicals. An extensive set of
United Nations documents, international treaties and Common Market materials
is also available. Working collections in the law of several important foreign
countries are sufficiently developed so that effective comparative studies may
be made. The law library maintains significant collections in the field of Canon Law and Mining Law.

The School of Law is an official depository for important legal records and documents. Chief Justice Earl Warren, one of the School's most distinguished alumni, designated the law library as a depository for U. S. Supreme Court records and briefs and, in addition, presented a gift of all briefs filed with the Court since 1936. The late Justice Harold H. Burton donated his bound set of the *Congressional Record*. In 1962 the library became a depository for California legal documents. In 1963 the Honorable Jeffrey Cohelan, Member of Congress, designated the library as an official depository of United States legal documents. All available briefs of California appellate courts are deposited in the library. In 1964 the Herbert Goodrich Library was established at the law library as a depository for Uniform Commercial Code publications.

In addition to general University appropriations the law library draws support from the following endowments: the Jane K. Sather Law Library Fund, the Louis E. Goodman Law Library Fund, the Garret W. McEnerney Memorial Fund, the Lloyd M. Robbins Fund, the Sidney M. Ehrman Law Library Fund and the William E. Colby Law Fund.

There is also valuable material for the study of law and legal institutions in the University Library, in the libraries of the Bureau of International Relations, the Institute of Governmental Studies, the Institute of Industrial Relations, and in the Bancroft Library.

**The Earl Warren Legal Center**

The opening of the Earl Warren Legal Center in 1967 has brought to fruition the vision and years of effort of Boalt Hall faculty and alumni. Its purpose is to improve the understanding of our laws, their interpretation and administration, and their role in society by a continuing program of conferences and research. Participation in these activities by a world-wide community of scholars, lawyers, judges, social scientists, and others will facilitate an interchange of ideas from a variety of disciplines.

Constructed as an integral part of the Law Complex, the Legal Center provides facilities, including an auditorium, meeting rooms and research offices, which has enabled the School of Law to enlarge its research activities and its program of conferences and institutes. Examples of these programs in recent years include the *National Housing Law Project*, the *California College of Trial Judges* and the *Penal Code Revision Project*. The presence of the Center in the School of Law is of mutual benefit to the activities and the educational program of Boalt Hall.

**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 service in various types of libraries and other information agencies. The School also offers two advanced degree programs—the Doctor of Library Science and the Ph.D.—which prepare a student for advanced research in theories
and problems of librarianship and the information sciences, as well as for administrative, planning, and teaching positions.

Admission

An applicant to the basic curriculum must hold a Bachelor of Arts or Science degree comparable to that given by the University of California. He must qualify for admission to the Graduate Division of the University, without deficiencies. In addition, he must submit scores from the Graduate Record Examination Aptitude Test and evidence of college-level study in foreign languages in one of the following combinations: (1) two or more years of one modern foreign language; (2) one year of one modern foreign language and one or more years of another foreign language, ancient or modern.

Note that two applications for admission are required; one for the School of Librarianship and the other for the Graduate Division, Berkeley, including an application fee of $10 and complete transcripts of record. Deadlines for applying to the Graduate Division are announced in the circular Admission to Graduate Study. Application blanks are available from the Office of the Dean of the School of Librarianship. The School urges its applicants to apply as early as possible (undergraduates should apply upon completion of the first term of their senior year).

Courses in the School of Librarianship’s basic curriculum are open to graduate students of other departments who are, in the instructor’s judgment, qualified to undertake the work.

The Basic Curriculum: Master of Library Science Degree

Forty-two (42) quarter units are required for the Master of Library Science degree. This involves three quarters and one summer session of study, in which the student is given a broad introduction to: forms of publication; reference; bibliographical organization; cataloging and classification; and the organization and administration of libraries (with a choice of specializations). The courses dealing with these topics are described under the School of Librarianship in the course section of this catalogue. The student will also have an opportunity to include elective courses in Librarianship and in other departments.

The student must maintain a minimum average of B (3.0). He may count toward the degree only those courses for which he receives a grade of A, B, or C. A student may, in exceptional cases and with the approval of the School, include in his program courses in librarianship taken at another accredited library school, to a maximum of four semester units or six quarter units.

For further details concerning the curriculum, please consult the Announcement of the School of Librarianship.

Advanced Degree Programs

These programs are open to applicants who satisfy the admission requirements, including graduation with a minimum B average from the basic curriculum in a graduate library school accredited by the American Library Association or approved by the University of California. In special cases applications will be considered from those with equivalent backgrounds in library-related fields.
Doctor of Library Science  This is a professional degree conferred in recognition of a candidate’s command of a comprehensive body of professional knowledge and of his ability to organize and carry out investigations of significant problems in librarianship.

A student is advanced to candidacy once he has satisfied several conditions: (1) residence in the School for three quarters; (2) passing an intensive written and oral examination administered by the School, covering material in the field of his dissertation; (3) securing approval of his complete program, including the proposal for his dissertation; (4) passing, if the faculty so requires, a qualifying examination in one or more foreign languages relevant to his dissertation.

In order to obtain the D.L.S. degree, the candidate must complete at least six quarters of graduate study beyond the first professional degree. His program of study will be supervised by a five-man committee appointed by the Graduate Council of the Berkeley Division. This committee will consist of three or four members from the School of Librarianship, and the remainder from departments related to the program of study. The program must include 54 units of graduate and upper division courses relevant to the candidate’s field of study (not including a thesis course, or courses in the basic curriculum described earlier). Finally, he must submit and defend his dissertation in an oral examination.

For further information, please consult the Announcement of the School of Librarianship.

Doctor of Philosophy  The degree of Doctor of Philosophy is conferred upon the qualified candidate in recognition of his command of a comprehensive body of knowledge and upon his demonstration of a general grasp of the subject matter of a large field of study. He must also show his critical ability and power to analyze problems, as well as to coordinate and correlate data from a number of cognate disciplines. The student must, furthermore, show through his dissertation the power to make an original contribution to his chosen field of study and, throughout all his career as a graduate student, give evidence of his ability to work independently.

The general procedures and requirements for the Ph.D. are outlined in Chapter III of this catalogue. The qualifying examination will include the field of the candidate’s dissertation (with closely related subjects outside of the School of Librarianship) and also one other field of librarianship. There is a final examination of the candidate’s comprehensive grasp of a wide range of knowledge relevant to the defense of his dissertation. For further information, please consult the Announcement of the School of Librarianship.

SCHOOL OF OPTOMETRY

Optometry is the art and science of vision care, drawing upon the principles of anatomy, optics, physiology, and psychology, and includes the study of both environmental and personal factors influencing visual performance. The School of Optometry seeks to provide training for the professional practice of optometry with high standards of competence. The School seeks as well to provide its students with an awareness of the social and intellectual environment in which they will practice their profession.
Admission

Students are admitted to the School of Optometry in the junior year (i.e., after 90 quarter units or 60 semester units of undergraduate preparation). A student is advised to include in the high school curriculum the following subjects: algebra, geometry, trigonometry, chemistry, physics, English, mechanical drawing, and two or three years of one foreign language.

The following college-level preparation is required (acceptable courses at the University of California, Berkeley, are given in parentheses):

- Analytical Geometry (Mathematics 16A–16B or Mathematics 190A–190B)  
  Biology (Biology 1A–1B–1C)
- General Chemistry (Chemistry 1A–1B)  
  Physics with Laboratory (Physics 6A–6B–6C)
- Organic Chemistry (Chemistry 8A–8B)  
  Psychology (Psychology 1)
- English (English 1A–1B or Speech 1A–1B)  
  Statistics (Statistics 2)

A minimum grade-point average of 2.25 is required. Minor subject deficiencies are permitted, if made up in the first year of enrollment in the School of Optometry. Students making up such deficiencies are enrolled in special status until the requirements are completed. Students must also satisfy the general University requirements for admission, given in Chapter I. For further details, see the ANNOUNCEMENT OF THE SCHOOL OF OPTOMETRY, available from the School upon request.

Program in Optometry

This program takes four years: the first year is devoted to more advanced study of the basic sciences which form the background for optometry; the second and third years are devoted to the science of optometry and the acquisition of the technical skills; the fourth year is devoted to the practice of optometry and the detailed study of specialized areas.

After successful completion of the fourth year, a student will receive the degree of Doctor of Optometry, which qualifies him to take the state board examinations in most of the United States.

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 and other details, consult the ANNOUNCEMENT OF THE SCHOOL OF OPTOMETRY and Chapter III of this catalogue.

GRADUATE SCHOOL OF PUBLIC AFFAIRS

Beginning in the fall of 1971, the School will offer new programs designed to train policy analysts and create new knowledge in the field of public policy.

* 2.4 for students who were ineligible for admission to the University in freshman standing, 2.8 for all out-of-state applicants.
The specific plans for this program are now being developed. Information about admissions and degrees to be offered will be available after October 1, 1970.

The one-year Master of Arts in Public Administration degree will be offered during the 1970-71 year, but not thereafter.

Please address letters of inquiry to The Graduate School of Public Affairs, University of California, Berkeley, 94720.

**SCHOOL OF PUBLIC HEALTH**

The objective of the School of Public Health is to provide the student knowledge in the basic public health disciplines of biostatistics, community organization, epidemiology and environmental hygiene and an opportunity to develop proficiency in those technical and organizational skills which are required for specialized work within the field of public health. The broad scope of this objective requires that the School present a faculty qualified in a diversity of fields. In addition, it calls upon the faculties of other departments and upon persons who are involved in the problems of public health practice outside the University. Courses may be drawn from many departments of the University and arranged so that the special needs of each student are best served.

**Admission**

Formal application for admission to the Graduate School of Public Health should be made not later than May 15. Those seeking traineeships should apply not later than April 1. Students are encouraged and in most programs required to enter for the fall quarter because of the order in which courses are scheduled.

Enrollments are limited by the physical capacity of the School and frequently a considerable time is required to process graduate applications. Usually applications are acted upon in the order in which they are received. Applicants should plan to apply well in advance even though there may be doubt as to whether they will be able to enroll, for there may be delays in awarding traineeships or fellowships. Should an applicant find his plans have changed so that he cannot enroll, he should notify the School of Public Health as soon as possible in order that an alternate may be admitted.

**Graduate Curricula**

Graduate curricula in the School of Public Health lead either to professional or to academic degrees. The professional degrees, Master of Public Health and Doctor of Public Health, constitute preparation for positions of administrative leadership in official and voluntary health agencies. The academic degrees prepare the candidate for research and teaching in specific fields in the health sciences. The requirements for admission to these programs are described in the **ANNOUNCEMENT OF THE SCHOOL OF PUBLIC HEALTH.**

**Master of Public Health**

The program leading to the Master of Public Health degree places emphasis on public health activities in general. However, because of the diversified nature of public health work, several areas of specialization are provided including the following:
Behavioral Science
Biostatistics
Comprehensive Health Planning
Environmental Health
Epidemiology
Hospital Administration
Laboratory Sciences
Maternal and Child Health
Medical Care Administration

Medical Microbiology
Nursing Administration
Occupational Health
Public Health Administration
Public Health Education
Public Health Engineering
Public Health Nutrition
Public Health Social Work

Within these curricula, certain technical fields such as dental health, family planning, and mental health may be given further attention.

In addition to the academic requirements described in the Announcement of the School of Public Health, candidates for the Master of Public Health degree must complete a period of approved field experience unless their previous experience renders this requirement unnecessary. Although students who are fully prepared may obtain this degree after one year of study, programs extending beyond a single academic year are not unusual. In certain cases, one or more quarters of preparatory work, as determined by the Admissions Committee of the School, are recommended before a student enters this curriculum.

**Doctor of Public Health**  This degree is conferred in recognition of the candidate's command of a comprehensive body of technical knowledge in the field of public health and its related disciplines, and his ability to initiate, organize, and pursue the investigation of significant problems in public health. Admission is based upon prior completion, with an outstanding scholastic record, of an academic program equivalent to that required for the Master of Public Health degree at the University of California, capacity for leadership in the field of specialization, and intellectual capacity to pursue independent work.

**Master of Arts**  The degree of Master of Arts in biostatistics is offered under the direction of the Group in Biostatistics composed of members of the faculties of the Division of Biostatistics of the School of Public Health and the Department of Statistics. A program in demography leading to the degree of Master of Arts is offered under the direction of the Group in Demography composed of members of the faculties of the School of Public Health, the Department of Economics, the Department of Sociology, and the Department of Demography.

**Master of Science**  Curricula leading to the Master of Science degree in environmental health sciences are offered in the fields of industrial hygiene, air resources, radiological sciences, or environmental biology.

**Doctor of Philosophy**  The degree of Doctor of Philosophy may be taken in biostatistics, demography, environmental health sciences, comparative pathology, epidemiology, immunology, or microbiology. The program in biostatistics is under the direction of the Group in Biostatistics composed of members of the faculties of the Division of Biostatistics of the School of Public Health and the Department of Statistics. The program in demography is under the direction of the Group in Demography composed of the members of the faculties of the School of Public Health, the Department of Economics, the Department of Sociology, and the Department of Demography. The program in comparative pathology is under the direction of the Group in Comparative Pathology; the
program in immunology is under the direction of the Group in Immunology; the program in microbiology is under the direction of the Group in Microbiology, composed of the members of the faculty of the School of Public Health and various other departments on the Berkeley, San Francisco, and Davis campuses.

Special Financial Aid for Training in Public Health

A number of traineeships and grants-in-aid are available for education in specific areas of public health. For further information, see the Announcement of the School of Public Health, or write to the Dean of the School of Public Health, University of California, Berkeley, California 94720.

School of Social Welfare

The School of Social Welfare is a graduate professional school offering: a two-year program of study leading to the degree of Master of Social Welfare; specialized post-master's programs of study for social work practice in Public Health, in Community Mental Health, and in School Social Work; and an advanced program leading to the degree of Doctor of Social Welfare. The master's and post-master's programs prepare for the professional practice of social work, with option for emphasis on clinical or nonclinical methods. The doctoral program prepares for careers in teaching, research, policy development and administration in the field of social welfare and in the profession of social work.

Admission

Every applicant for admission to the School of Social Welfare must hold the degree of Bachelor of Arts or Bachelor of Science from the University of California or an equivalent degree from a college or university of recognized standing, and must establish his eligibility for admission in graduate standing at the University of California. For details of admission to graduate standing, see the booklet Admission to Graduate Study.

Dates for Filing Application

Admission to the School of Social Welfare as a full-time student is possible only in the fall of each year. Applications should be submitted as early as possible beginning in the preceding October, and no later than March 1, for admission in the following academic year. Admission as a part-time student to take courses without field work may be possible in the winter and spring quarters. Applications for admission in the winter quarter for part-time study should be filed by October 10, and for the spring quarter, by January 10.

Master of Social Welfare Program

The prerequisites for admission are: the completion of the group major in social welfare offered in the College of Letters and Science at the University of California, Berkeley, or an equivalent major; or the completion of undergraduate study of psychology, sociology, cultural anthropology, and other social sciences sufficient, in the judgment of the faculty of the School of Social Welfare, to prepare the applicant for graduate study in the School; and suitability for the profession of social work, as determined by the faculty of the School of Social Welfare.
To earn the Master of Social Welfare degree, a student must spend the equivalent of two academic years of graduate study in social welfare, one year of which must have been in residence at the University of California. Students who have completed courses that are part of a social welfare curriculum in an accredited school of social welfare elsewhere than at the University of California may be given appropriate transfer units.

The program of study provides knowledge of human development and pathology, including psychodynamics and psychopathology; social organization; social policy and social welfare services; methods of social work practice, including community organization and social action; and the logic and method of social research. Supervised field work is an important part of the curriculum and is concurrent with academic courses.

**Post-Master’s Programs**

The Schools of Social Welfare and Public Health jointly offer an educational program to prepare social workers for practice in the public health field. Qualified persons may enter the program in the second graduate year or after taking the Master of Social Welfare degree. A third year of advanced courses and field work is offered, with option for choosing a program leading to the Master of Public Health degree, or for studying in an advanced practice nondegree program.

The School of Social Welfare offers a post-master’s program to prepare experienced social workers for practice in Community Mental Health. The curriculum allows maximum flexibility to meet the educational needs and career goals of each student. Courses and field experience emphasize community organization, mental health consultation and education, administration and policy development, evaluative research, and modes of preventive intervention in the mental health field.

The School Social Work Internship 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.

**Doctoral and Predoctoral Programs**

The prerequisites for admission to the regular doctoral program are a master’s degree from an accredited school of social welfare, and the intellectual and other qualifications essential to successful performance. In addition, the School offers a predoctoral program for selected students who want to begin work toward the doctorate in their first year of graduate study. Predoctoral students work toward the master’s and doctoral degrees simultaneously, and normally can complete the work for both degrees in four to five years of full-time, continuous study. Applicants to both the doctoral and predoctoral programs must meet the admissions requirements of the Graduate Division as well as those of the School of Social Welfare.

The student’s doctoral program is individually tailored to his particular interests in social welfare. To earn the Doctor of Social Welfare degree, the candidate must (1) complete a course of study in the School of Social Welfare and other departments; (2) spend at least two years in full-time residence;
SPECIAL SUMMER PROGRAM FOR TEACHERS

(3) pass written and oral qualifying examinations on his field of specialization in the areas of social theory, social policy and social problems, and professional activity; and (4) write a dissertation demonstrating ability to conduct independent research.

Special Facilities

The Social Welfare Research Projects Office, located in Richmond, California, facilitates opportunity for research for students enrolled in the School.

Several branch libraries on the campus, including the Social Welfare Library, the Education-Psychology Library, the Graduate Social Science Library, the School of Public Health Library and the School of Law Library all contain materials of value to social welfare students. Outstanding in its field is the Institute of Governmental Studies Library which contains an unusually fine collection of social welfare documents and reports, invaluable to students in a field where the literature is largely documentary.

The Associated Students of the School of Social Welfare (now known as Berkeley Social Welfare Student Union) is an active organization for graduate students in the School. As a recognized campus organization, it has access to the University facilities available for such student groups. The undergraduate Social Welfare Club is a comparable organization for students in the undergraduate group major and other students interested in the profession of social work and the field of social welfare.

Financial aids, in addition to the general University scholarships, are available especially for students in the School of Social Welfare. Information concerning financial aids may be obtained upon request from the School of Social Welfare.

Social Welfare Extension

The Social Welfare Extension program, administered by University Extension in cooperation with the School of Social Welfare, offers service to the health and welfare agencies of California through consultation on staff development and through the organization of courses, workshops, and conferences. A sequential study program leading to a Certificate in the Social Services is offered to groups of employed social service workers.

Undergraduate Group Major in Social Welfare

The Department of Social Welfare administers the undergraduate group major in social welfare in the College of Letters and Science. For information see page 538.

SPECIAL SUMMER PROGRAM FOR TEACHERS

(June 22–July 24, 1970)

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 9 quarter units, the equivalent of 6 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 1970 include a $10 application fee, a $130 tuition fee, and a $2 student union fee—a total of $142. Auditors or visitors are not allowed in the Summer Program classes. Interested persons may obtain further information and an application form by writing the Summer Program Office, 1605 Tolman Hall, University of California, Berkeley, California 94720. The telephone number is (415) 642-0841.

**SCHOOLS AND COLLEGES IN SAN FRANCISCO**

A student who plans to enter one of the University’s professional schools or the affiliated college in San Francisco may receive his required preprofessional training on the Berkeley campus.

For information regarding admission requirements, curricula, and costs, the prospective student should write to the dean of the school or college in which he is 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.
VI. Research at Berkeley

The Berkeley campus is renowned for its programs of faculty and graduate student research, which for the most part are conducted within the teaching departments. The subject matter of research at Berkeley thus is as diverse as the collective interests of the members of its faculty and students. In some instances, particular departments have established special research laboratories to provide essential services to research projects.

Research also is conducted in organized research units that are established and administered separately from the teaching departments. These special units are sometimes designed to support a well-defined research mission. More often they are interdisciplinary in nature and organized around the projects 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 goals are appropriate and this type of activity is an important aspect of the programs of some units.

The research units are classified in the following manner: (1) Institute. Agency established primarily to coordinate and promote long-range faculty research needs and interests organized around a broad subject area. Research projects and programs normally cut across departmental, school, college, or campus boundaries. (2) Center. An agency established within an institute to further research interests of the faculty in a designated major area; or a separate agency which provides facilities for faculty research projects (for example, Computer Center). (3) Bureau. An academic agency engaged primarily in public service activities and in facilitating research in one or more academic departments related to these activities. (4) Nondepartmental Laboratory. A research organization headed by a director who is a faculty member, with a research staff which may include nonfaculty personnel. (5) Museum. A permanent collection of material used in research and teaching, under faculty supervision. (6) Station. A unit equipped with facilities for research conducted by academic departments and divisions on one or more campuses. (7) Project. Title applied to units carrying out research activities requiring the participation of faculty members of several specializations, but not originating from long-range needs and interests.

Adolph C. and Mary Sprague Miller Institute for Basic Research in Science

Through the benefaction of the late Adolph C. and Mary Sprague Miller, The Regents of the University were able to establish in 1956 an Institute “dedicated to the encouragement of creative thought and the conduct of research and investigation in the field of pure science, provided, however, that there may be conducted at said Institute research and investigation in the field of applied science insofar as such research and investigation are deemed by The Regents to offer a promising approach to fundamental problems.” The donors defined the purpose of the Institute as “to discover and encourage the work of individuals of great talent or promise.”
The Miller Institute, administered by an Advisory Board and Executive Committee, uses the income from its endowment for the appointment for limited terms of Miller Professors who are freed from all other University duties. Local departments in the basic sciences may propose nominations for Visiting Professors. The Institute also offers two-year Miller Fellowships at the recent post-doctoral level. The competition for these is worldwide.

**Institute of Business and Economic Research**

The Institute of Business and Economic Research was founded as the Bureau of Business and Economic Research in 1941 "... for the purpose of stimulating and facilitating research into problems of economics and of business with an emphasis on problems of particular importance to California and the Pacific Coast, but not to the exclusion of problems of wider import."

At the present time the Institute, by acting as an administrative agency for projects supported both by outside agencies and by using its University funds, facilitates productive research by faculty members in Business Administration and Economics. In carrying out this function, the Institute provides research assistance for faculty members from its own funds and an opportunity for training and financial support for qualified graduate students. Among services provided faculty and students are editing, clerical, reproduction, and calculating. Assistance in securing external research support is offered faculty members and graduate students. As far as funds permit, exploratory grants are provided to test the feasibility of larger-scale projects that may qualify for extramural support. Within space limitations, students employed by faculty members are supplied with working space in project areas. Special effort goes to assisting younger faculty members who have not yet achieved outside recognition.

The Institute maintains an active publishing program by which results of research are distributed through four channels: (1) Monograph Series, published through the University of California Press; (2) Special Publications, published and distributed directly by the Institute; (3) Reprint Series, containing results of studies published in article form in scholarly journals; (4) Working Papers Series, permitting limited prepublication distribution of research of immediate interest to scholars.

**Office of Research Services**

(See page 83.)

**Institute of Governmental Studies**

The Institute of Governmental Studies was established in 1921 as the Bureau of Public Administration, and given its present name in 1962. One of the oldest organized research units in the University of California, the Institute conducts extensive and varied research and service programs in public policy, politics, urban-metropolitan problems, and public administration.

A prime resource in these endeavors is the Institute's public affairs library, comprising over a quarter of a million documents, pamphlets, and periodicals related to government and public affairs. The library serves faculty and staff members, students, public officials, and interested citizens.
The Institute's professional staff is composed of faculty members who hold joint Institute and departmental appointments, research specialists, librarians, and graduate students from a variety of social science disciplines. In addition, the Institute is host to visiting scholars from other parts of the United States and many foreign nations.

The Institute publishes books, monographs, periodicals, reprints, reports, and bibliographies for a nationwide readership. The publications are intended to stimulate research, thought, and action by scholars and public officials, with respect to significant governmental and social issues. *California Public Survey*, a digest of public information, and *Public Affairs Report*, a discussion of current issues in public policy, are issued bimonthly by the Institute for distribution to interested persons and organizations.

The Institute of Governmental Studies participates in the University's teaching function both through its library facilities and through training advanced students in public affairs analysis. In addition, the Institute serves as the secretariat for two organizations active in governmental research and administration: the Western Governmental Research Association and the San Francisco Bay Area Chapter of the American Society for Public Administration.

For further information concerning the activities of the Institute of Governmental Studies, write to the Director, 109 Moses Hall.

**Institute of Human Development**

The Institute, which was established in 1927 as the Institute of Child Welfare, was renamed in 1958 to symbolize its research interest in human development over the whole life span. This interest includes not only the study of behavior as related to physical development and biological change, such as research on child development and aging, but also social transitions and the physiological, psychological and interpersonal consequences of changes in the social environment.

Among the Institute's facilities is the Harold E. Jones Child Study Center, which houses the University nursery school and serves as a laboratory for the study of the preschool child. The Center is used as a setting for training activities by several departments, in addition to serving as a base for both faculty research and student theses.

The Institute research program includes several long-term longitudinal projects, which afford data for the use of collaborating staff and students, as well as grant-supported projects of shorter duration. A small working library is maintained primarily for the use of the research staff and its affiliates.

**Institute of Human Learning**

The purpose of the Institute is the advancement of experimental research in the field of human learning. The Institute is an interdisciplinary unit, and at present includes faculty members from the departments of Psychology, Education, Anthropology, and Rhetoric. The work of the Institute places emphasis on the analysis of the basic principles of human learning and on the application of these principles to such areas as education and language development. Programs of research within the Institute are supported by grants from extramural agencies and contacts.
The Institute provides research and training opportunities for graduate students who specialize in the study of human learning. Active areas of interest include verbal learning and memory, perceptual and discrimination learning, mathematical models in learning and concept formation, language development and associative processes, programmed teaching, and individual differences in learning ability. Research seminars and colloquia are held regularly throughout the year.

Institute of Industrial Relations

The Institute of Industrial Relations, authorized by the Legislature of the State of California in 1945, began operations in 1946. It is concerned with three principal types of activity. The first is an interdisciplinary research and publishing program currently directed primarily toward the following areas: labor, management, and minority relations; education and manpower training; wages and related problems; economic security programs; the labor market and labor mobility; and social and industrial psychology. Research staff members of the Institute are usually drawn from the regular faculties of the departments of Business Administration, Economics, Political Science, Psychology, and Sociology. The second main activity is research training and financial support of graduate students as graduate research assistants, mostly to individual faculty staff members but also to some group research projects which are related to the Institute’s Community Services activities. The latter are under the direction of faculty or other senior professional research staff. The third main activity consists of a set of educational and related research activities in the area of industrial relations for groups of trade unionists, industrial managers, and the general public. These are directed by the Institute’s Center for Labor Research and Education, on the one hand, and by its Coordinator of Management Programs, on the other. Emphasis is given to the wider aspects of industrial relations, and in particular to its relationship to urban and minority problems.

Institute of International Studies

The Institute of International Studies was established in 1955 to coordinate the rapidly expanding programs of area studies and comparative/international studies on the Berkeley campus. Faculty and student activities in the international field were centrally linked and integrated, and a key point of communication was established between the campus and outside agencies interested in international research and assistance programs. Through the early 1960’s the emphasis within the Institute was primarily on area studies, with some attention being given to international service programs. Since then, as the consequence of a growing interest in comparative/international research made possible by the accumulation of enormous amounts of new data by area specialists, and by the development of new techniques for handling such data, there has been a readjustment within the Institute of the balance between area and comparative/international studies. The changed emphasis within the Institute and the introduction of new methods have stimulated intense discussion concerning the relationship between comparative and area work and the methods of study most appropriate to each. The consequence has been an important dialogue on
theoretical and methodological issues central to the future of academic research and work in the social sciences.

The provision within the Institute for three different research approaches—the comparative/international approach, the area or regional approach, and the theoretical/methodological approach—has created an extremely flexible system for dealing with research problems, and allows the faculty member or student a wide range of choices concerning the emphasis of his work.

**COMPARATIVE/INTERNATIONAL STUDIES**

Comparative studies investigate relationships or problems in several settings, institutions, or countries. The comparative programs of the Institute involve studies within one society or type of society, as well as studies of an overarching nature, embracing various societal types. In the first category are investigations of the socioeconomic and political characteristics of new (or emerging) nations, Communist countries, and Western industrial societies. In the second category is cross-cutting research—research that deals with problems and phenomena encountered in all three major types of societies. Such research is devoted primarily to the study of international relations in the pure sense, i.e., relations among states and societies. Thus the Institute sponsors studies on international law, international organizations, and regional movements. Other subject areas investigated under Institute sponsorship are political and economic development, the characteristics and dynamics of Communist societies, the composition and recruitment of political elites, world population growth and demographic behavior, the relationship between religion and society, social linguistics and communication, and the characteristics and dynamics of highly industrialized societies.

**Faculty Assistance**

The primary means by which the Institute carries out its programs is through various forms of assistance to Berkeley faculty members. (For purposes of determining eligibility for assistance, any individual is treated as a Berkeley faculty member as soon as he receives a firm offer from Berkeley, but actual assistance is contingent upon his joining the Berkeley faculty. Members of the faculties of other campuses of the University of California are eligible only if their work is part of a well-integrated collaborative effort with a Berkeley faculty member or Berkeley-based project.) Funds are available for released time, for teaching, travel, supplies, data processing and computer services, clerical and research assistance, library acquisitions, special visitors, seminars, conferences, and research-training projects.

Research proposals may be submitted at any time. These proposals, according to their quality and feasibility, may be supported with amounts ranging from a few hundred to several thousand dollars. Members of all disciplines and departments are eligible for funds, insofar as they address themselves to comparative/international issues relevant to the social sciences. Not all research need be comparative/international in substance. Comparisons within a single country or case studies of specific processes, ideas, or institutions are acceptable when their significance for wider theoretical concerns can be made clear. (Further
information concerning how and where to apply for funds, and the exact dates for submitting proposals and for the announcements of awards, can be obtained by writing to the Institute.)

Research Facilities
In addition to the types of assistance to faculty members detailed above, the following services and facilities are available through the Institute and its centers:

Library Facilities Supplementing the Main Library of the Berkeley campus, with its vast store of reference materials, there is a special Institute of International Studies Library, as well as several area center reading rooms. These are constantly expanding, both in terms of services and materials.

Data Processing Facilities The Institute collaborates with the Survey Research Center at Berkeley in maintaining the International Data Library and Reference Service. This facility is designed to assist social scientists in obtaining, processing, and analyzing domestic and foreign survey materials. Basic data from over 150 studies concerning the developing countries (principally those in Asia and Latin America) as well as from several hundred studies concerning Europe and North America are contained on IBM cards for rapid processing.

AREA STUDIES
The Area Centers and Committees organize, sponsor, and facilitate the work of scholars in different departments of the University who are particularly concerned with specific areas. They maintain the research resources and facilities essential to the study of these areas: basic reference works, pamphlets, newspapers, reading rooms, language programs, etc. In addition, they conduct interdisciplinary seminars and provide assistance to scholars in planning research projects and formulating proposals for financial and other types of assistance.

Committee for African Studies As the result of an increasing interest in African affairs on the part of faculty members and students in several departments, a Committee for African Studies was organized on the Berkeley campus. The Committee forms the core of an interdisciplinary colloquium in which African specialists, other faculty members, and students participate.

The Committee promotes the collection of research materials on Africa at Berkeley, and cooperates with the African Studies Center at UCLA in sponsoring visits by African specialists from educational institutions throughout the world.

Through the University and the Institute of International Studies, the Committee assists students in obtaining fellowships and grants-in-aid for African studies.

Center for Chinese Studies The Center was established in 1957 to meet the urgent need for social scientists interested in advanced research on contemporary China. The Center has been unique in its focus on the development of mainland China since 1949, but within this emphasis, its interests are extremely broad, and include the fields of anthropology, economics, geography, modern history, law, sociology, and political science.
The Center supports individual research by faculty members (at Berkeley and other campuses of the University) in the contemporary China field. It cooperates in a group research project on the current Chinese language, and conducts seminars and meetings on the Communist world jointly with the Center for Slavic and East European Studies. In addition, the Center sponsors a program of research colloquia and informal luncheon meetings which are generally open to all those with scholarly interests in Communist China. To graduate students with a serious commitment to research on contemporary China, the Center offers a program of grants-in-aid. This is supplemented by special tutorial assistance in developing the grantees‘ command of current Chinese.

The Center maintains a large collection of newspapers, periodicals, and other source materials from, and relating to, Communist China. This is now one of the principal specialized collections in the field. Publications of the Center include: China Research Monographs; Studies in Chinese Communist Terminology; California Books on Modern China (in collaboration with the University of California Press); and a reprint series of articles and shorter studies by members of the Center.

Center for Japanese and Korean Studies The Center is the unifying organization for all faculty members and students interested in Japan and Korea. It brings together scholars from many disciplines whose interests focus on the analysis of the factors which determine the special social characteristics of these two countries.

The Center facilitates the individual research programs of faculty members by providing research assistantships, travel funds, research materials, etc. Several grants-in-aid are awarded annually to graduate students working in Japanese or Korean studies.

A series of books and monographs concerned with Japan and Korea is sponsored by the Center. It also conducts a monthly colloquium at which papers in this field are presented and discussed.

Center for Latin American Studies Established in 1956, the Center supports faculty research projects and provides supplementary grants-in-aid to graduate students. Current and recent faculty research projects include: historical demography of Mexico; comparative economic history of Latin America; silver mining in colonial Mexico; village law in Mexico, and geography of northeast Brazil. Outstanding graduate students in Latin American studies are designated as Center Fellows; although no monetary support accompanies this award, Center Fellows are given small carrels, free copy service, letters of introduction when leaving for Latin America, and other aid in their research activities. Authors of outstanding doctoral dissertations are given a stipend and the option of publication by the Center. Each year the Center publishes the "Directory of Faculty with Latin American Research Interests," which provides information on publications and current research of about one hundred faculty members doing research on Latin America. The Center also administers the University of Chile-University of California Cooperative Program for the Berkeley campus.

The Center sponsors a number of lectures and seminars. The Dissertation Seminar provides an opportunity for students anticipating or returning from
field research to discuss common problems of research design and data collection. The Stanford-Berkeley Colloquium, hosted jointly with the Committee on Latin American Studies at Stanford, facilitates scholarly interchange between faculty and graduate students of the two universities. At informal luncheon meetings faculty and graduate students discuss their current research. The Center also holds formal lecture series; topics for recent lecture series included “The Caribbean in Crisis” and “Brazil.”

The Berkeley campus has one of the nation’s best collections of historical materials dealing with Latin America, and the Center is actively promoting the acquisition of additional contemporary materials. In addition, the Center Reading Room has a collection of journals and recently published books related to Latin America, as well as airmail editions of major Latin American newspapers.

Committee for Middle Eastern Studies For a number of years, the Berkeley campus has had impressive resources in this area, in terms of faculty, library materials, and course offerings, and in 1962 the Committee for Middle Eastern Studies was established, reflecting a growing interest in the area within several departments.

The Committee provides the organizational form necessary for an integrated program of research and training. It sponsors public lectures, symposia, and conferences devoted to the analysis and discussion of the problems of the Middle East, in which distinguished visitors from American and foreign universities participate. In addition, it supports the work of faculty members by securing funds for domestic and overseas research. The area of interest includes Turkey, Iran, Afghanistan, Israel, and the Arab States of the Middle East and North Africa.

Center for Slavic and East European Studies Established in 1957 as the successor to the former statewide Institute for Slavic Studies, the Center continues the long history of Slavic studies on the Berkeley campus. Its area of concern is the Soviet Union and the Communist countries of Eastern Europe, with emphasis on the social sciences, modern history, geography, and literature.

The Center’s funds are devoted primarily to the support of research projects of faculty members, including some on campuses of the University other than Berkeley. It organizes various activities such as colloquia, conferences, and public lectures, and maintains a reading room with newspapers, periodicals, and miscellaneous materials from and about the USSR and Eastern Europe, as well as such research tools as files of newspaper clippings and bibliographical cards.

Financial support for graduate students is mainly in the form of research assistantships. However, some grants-in-aid are also available from the Center, primarily for the support of summer study and language training.

Center for South and Southeast Asia Studies South Asia Studies at Berkeley have developed significantly since their establishment in 1906 and Southeast Asia Studies since their formal inauguration in 1960. The two Centers have now merged and the Center for South and Southeast Asia Studies provides improved communications, courses, research activities, and library services. The Berkeley campus, already distinguished for its Asian Studies, has thus further
INSTITUTES / 125

developed its comprehensive and coordinated approach to the problems of social, economic, and political development in Southern Asia.

The teaching program continues to grow at both graduate and undergraduate levels. With the assistance of grants from the U.S. Office of Education, the Center supports the teaching of modern South and Southeast Asian languages and literature—most notably in Hindi, Urdu, Tamil, Malay-Indonesian, Thai and Tagalog. A number of departments in the social sciences and humanities offer courses including or focusing on South or Southeast Asian material, and interdisciplinary courses for graduates and undergraduates are well established. Scholarships are available for the Summer Language Institute and the masters’ program in South Asia Studies.

The Center serves to facilitate the research activities of faculty members on all campuses of the University through grants-in-aid, research assistantships and travel funds. Research results, including those of visiting lecturers, are presented and discussed in lectures, colloquia, seminars, and various forms of publication. Librarians and bibliographers, especially trained in South and Southeast Asia library services, are of special assistance in maintaining and extending the library collections—among the most extensive in existence.

Institute of Library Research

The Institute of Library Research is a University-wide research organization currently with branches at Berkeley and Los Angeles. The Institute is closely associated with the School of Librarianship and provides opportunities for faculty, graduate students, and visiting scholars to participate in its research activities.

Broadly conceived, the Institute has the following three related objectives:

Research: to pursue a long range program of fundamental research in library science, with special emphasis on the use of formal techniques and information processing technology to attack basic problems of library science.

Education: to develop special facilities required for advanced education and research in library science, with special emphasis on the development of facilities for experimentation with problems of on-line interrogation, search, file organization, and related problems of automatic information storage and retrieval.

Service: to assist all of the libraries of the University of California in coping with the immediate and pressing operational problems, with special emphasis on the design of improved systems and procedures for automating clerical functions and for the use of new technology for storing and sharing library data.

Institute of Marine Resources

The Institute of Marine Resources is a Universitywide organization with headquarters on the San Diego campus. Its objectives are to encourage and support research on the resources of the ocean.

On the Berkeley campus the Institute of Marine Resources supports a research unit in Marine Food Science, within the administrative framework of the Department of Nutritional Sciences, College of Agricultural Sciences. Some teaching and seminars are conducted by institute personnel but no special courses are
currently offered in this field. The research program involves the study of fundamental problems connected with the utilization of ocean fauna for food.

The Institute also sponsors research in inorganic marine resources, chiefly on the chemical and geological properties of ocean-bottom sediments, in the College of Engineering in cooperation with the Ocean Engineering Program.

**Institute of Personality Assessment and Research**

The Institute was established in 1949 through a grant from the Rockefeller Foundation for the study of human effectiveness and has been maintained since then through grants from the Carnegie Corporation of New York, the National Science Foundation, the National Institute of Mental Health, the Office of Education, and other agencies, as well as through regular intramural support by the University. The several interrelated objectives of the Institute's work are:

1. The development of techniques and procedures for the psychological assessment of the functioning of the human individual, including standardized appraisal instruments, “living-in” assessment methods, life-history inquiries, etc.

2. The utilization of these assessment procedures in studies seeking to discover (a) the characteristics of persons who are highly effective in their personal lives and professional careers, and (b) how such effectively integrated persons are produced in our society, with respect to such determinants as: family and childhood background; sex; educational experiences; social, intellectual, and physical environment; life-history in general.

3. The administration of assessment instruments to samples of various professional groups, e.g., medical students, student writers, engineering students, social welfare students, and architecture students, as part of selection procedures, in order (a) to make predictions concerning career potential, and (b) to conduct follow-up studies of subsequent career success or failure in validation of the predictions.

4. The application of the knowledge gained from the foregoing types of studies on the assessment and understanding of effective persons to the goals of nurturance and training of individual creativity, productive thinking skills, aesthetic preferences and abilities, high-level social functioning and psychological competence and well-being in general.

Most senior members of the staff hold joint appointments in teaching departments of the University, and consequently the Institute, though it offers no formal instruction in courses and seminars, is an important training and research facility for students who wish to specialize in the study of persons. Research assistantships are available to graduate students.

The investigations of the Institute are supported in part by grants from philanthropic foundations and governmental agencies, and by contract research.

**Institute of Urban and Regional Development**

The Institute was established in 1963 to focus research attention upon the problems of city, metropolitan, and larger regional development. Its present Centers, described below, are to be supplemented in the future by a program
directed toward urban social problems. In addition to the Center programs, the Institute works with other research organizations on such common problems as transportation and land use models, urbanization processes in developing countries, development decision-making in metropolitan areas, and the regulation of development. It draws upon faculty and graduate student resources in the professional schools, social and natural sciences, and the arts.

The Center for Real Estate and Urban Economics was established in 1950 to conduct research in real estate and land economics and to assist in improving methods in the industry and related government services. Its research program includes projects on real estate and housing markets, finance, the organization and administration of the industry, and the economic, demographic and fiscal forces affecting urban growth. The Center publishes research monographs and reprints, and jointly with its counterpart on the Los Angeles campus issues an annual report designed to acquaint real estate practitioners with current developments in real estate research and education. It provides research support for faculty members and graduate students in business administration, city and regional planning, economics, finance, statistics, and related fields.

The Center for Planning and Development Research was established in 1962 to conduct research in city and regional planning and related social and technical processes. In addition, the Center provides service to governmental and private agencies in the development of new techniques for the solution of development problems. Typical projects include studies supporting the California state development plan; a study of the implications for urban development of concepts arising from aerospace research; a history of city planning; and studies on environmental behavior in the metropolitan region, community value measurement, programming and design of residence hall environments, urban rehabilitation, residential environment and health, interregional population growth, neighborhoods standards, planning for solid wastes, as well as individual work on community facilities and services, amenities and community design. While closely related to the Department of City and Regional Planning, the Center serves faculty and graduate students in agricultural economics, architecture, business administration, criminology, engineering, geography, law, political science, sociology, and systems analysis.

Institute of Transportation and Traffic Engineering
(See page 135.)

LABORATORIES*

Cancer Research Genetics Laboratory
(See under Zoology)

Electronics Research Laboratory
(See under Engineering)

* For a list of additional laboratories, described under departmental headings, see page 132.
Bodega Marine Laboratory

The Bodega Marine Laboratory is a University-wide facility designed to support research and teaching in the marine sciences and is located on Bodega Head, adjacent to the town of Bodega Bay, in Sonoma County. The property consists of 327 acres fronting on both the ocean and on Bodega Harbor. The property is treated as a biological refuge, and its mile-long ocean frontage is protected as a California Marine Life Refuge.

The Laboratory began operation in 1966 in its present location and is a regularly budgeted research facility within the University. It contains 25 research laboratories and a complement of equipment for work in biochemistry, physiology, developmental biology, microbiology, ecology, botany, zoology, and marine geology. Two well-equipped teaching laboratories which will accommodate a total of 40 students are included in the building. A large aquarium room contains numerous aquaria, ranging in size from 10 to 600 gallons, plus concrete tanks with a capacity of 1,000 gallons. There also are concrete pools located in the Laboratory courtyard. The aquarium room, teaching laboratories, pools, and many of the research laboratories are supplied with unfiltered, continuously flowing sea water. The Laboratory also operates a number of small boats which support collecting and research activities and operates a housing facility for students and Laboratory personnel.

The facility is available to graduate students and faculty in support of their research activities and the classrooms are available to support teaching activities of the academic departments.

Laboratory of Chemical Biodynamics

The Laboratory of Chemical Biodynamics applies the sciences of chemistry and physics to the fundamental problems of biology. Its work is based on the modern view of the living cell as a dynamic system of chemical transformations, and research in this Laboratory emphasizes chemical biodynamics as a progressive step in the quantitative development of biology. The individual research activities are generally concerned with the dynamic molecular bases for (1) growth, (2) the regulation of energy transformation and transfer, and (3) the accumulation, storage, transfer, and read-out of biological information.

The Laboratory is a research facility for members of various University departments, presently including Chemistry, Physics, Botany, Molecular Biology, and Psychology. In addition, the Laboratory welcomes postdoctoral fellows for further training in their particular fields.

Students may do thesis work for presentation to the Graduate Division for degrees in these and other departments and may engage in group curricula such as Biophysics, Comparative Biochemistry, Neurobiology, and Plant Physiology, by arrangement with faculty members involved. The Laboratory is also a unit of the Lawrence Radiation Laboratory.

Donner Laboratory

The Donner Laboratory was founded to integrate the basic sciences of physics, chemistry, and mathematics in carrying out the program in biology and medicine of the Lawrence Radiation Laboratory. It is supported by the Atomic
Energy Commission. The teaching center of the academic Division of Medical Physics, which is an outgrowth of the research program of the Laboratory, is also housed here. The main Laboratory building is located next to Founder's Rock at the northeast corner of the campus, and not far away is the Donner Pavilion, the Laboratory's investigative hospital wing. Other Laboratory facilities including animal housing and various facilities for animal and human investigation, are located in the Hill Area of the Lawrence Radiation Laboratory. The staff includes 10 senior research scientists in addition to eight academic personnel, thirty-seven postdoctoral staff members, and seventy-eight research fellows and students.

Research in biophysics is conducted on macromolecular, cellular, and animal systems. Radiobiology and space biology are subjects of active interest. Molecular fields of study include active study of lipoproteins, the nature of enzyme function, the biophysics of nucleic acids, and the study of molecular excited states. Cellular studies center around basic radiation genetics of microorganisms, electrical properties of cells and subcellular particles, cell division dynamics, properties of mammalian cells in vitro including studies on neurons. Metabolic studies using various biophysical techniques including radioactive tracer studies are carried out on hemopoiesis, heart disease, neoplastic disease, diabetes, endocrine diseases, atherosclerosis, aging, radiation, etc. The Laboratory has modern equipment and instrumentation for biophysical and medical research including the accelerators of the Lawrence Radiation Laboratory. It also is a pioneering center for training in the rapidly advancing field of nuclear medicine, with its clinic and hospital wing, and its academic program for advanced training for young physicians.

Students may work for several degrees including the A.B. in biology and physics (individual group major), the Master of Bioradiology (a degree in the field of health physics), the Ph.D. in biophysics or in medical physics (for those already holding the M.D. degree). Several predoctoral and postdoctoral research positions and fellowships are offered. Postgraduate physicians are trained in biophysics and nuclear medicine.

**Hormone Research Laboratory**

The activities of the Hormone Research Laboratory center about research on the chemistry and biology of the hormones from the anterior and intermediate lobes of the pituitary gland. The isolation and characterization of a great number of these hormones have been achieved here, and present research is concerned with obtaining the hormones in their purest form, investigating their biological activities, and accomplishing their chemical structure and synthesis. An equally important objective is the training of predoctorate and postdoctorate investigators in the techniques and methods requisite for work in the fields of protein chemistry and experimental endocrinology. In addition, the Laboratory has been a source for highly purified pituitary hormones for biological and clinical investigations, not only within the University community but also throughout the world.

Seminars and courses in protein chemistry, biochemical aspects of endocrinology, and the biochemistry of hormones have regularly been offered by the staff.
of the Laboratory. A number of research assistantships and postdoctorate fellowships are provided for qualified applicants each year.

**Inorganic Materials Research Laboratory**

This laboratory is a research organization which functions as a division of the Lawrence Radiation Laboratory. The 32 principal investigators in the Inorganic Materials Research Laboratory are also faculty members in various campus departments including Materials Science and Engineering and Nuclear Engineering in the College of Engineering; Chemistry and Chemical Engineering in the College of Chemistry, and Physics in the College of Letters and Science. Graduate student instruction and research (for approximately 200 graduate students) is carried out under the direction of these principal investigators. The purpose of the Inorganic Materials Research Laboratory is to increase the understanding of the factors that determine the properties of materials by interdisciplinary research and education. Through such cooperation it becomes possible to undertake major comprehensive research problems previously conducted as separate, incomplete fragments. This laboratory provides facilities for research in metallurgy, ceramics, and nuclear and chemical engineering as well as inorganic and physical chemistry and solid state physics. Research topics include: experiments at very high pressures and temperatures and ultra-low pressures and temperatures; synthesis of inorganic materials; evaluation of influences of microstructure, composition, temperature, pressure and other variables on mechanical properties; spectroscopic and mass spectroscopic investigations of high temperature vapors; studies in crystal imperfections, high strength and fracture toughness, high field superconductivity, electric and magnetic properties of solids, and mechanisms of reactions.

**Lawrence Radiation Laboratory**

The Ernest O. Lawrence Radiation Laboratory, Berkeley, is a major campus facility for fundamental research in high-energy physics, nuclear chemistry, inorganic materials, medical physics, and bioorganic chemistry. Principal research instruments at the Berkeley laboratory include the 6.2 billion electron volt Bevatron, the 184-inch synchrocyclotron, the Heavy Ion Linear Accelerator, and the 88-inch cyclotron. Opportunities are available for graduate students to perform research at the Berkeley laboratory under the direction of faculty members and staff scientists.

The Livermore site of the Laboratory conducts a separate, primarily applied research program, part of which concerns nuclear weapons development and other classified subjects. Major Livermore programs also include unclassified basic research in the physical sciences, controlled thermonuclear reactions, biomedicine, and peaceful uses of nuclear explosives.

**Naval Biological Laboratory**

The Naval Biological Laboratory, a research facility in the School of Public Health, operates under a contract between the Regents and the Office of Naval Research. Naval Medical Research Unit No. 1 of the Bureau of Medicine and Surgery, Department of the Navy, actively collaborates with the Laboratory.
Research is concerned with fundamental investigations in the general areas of environmental microbiology, experimental pathology of infectious diseases, and medical microbiology as they apply to public health and to the health of naval personnel. The Laboratory is staffed by civilian and naval personnel under the direction of a University appointed director. Facilities are available for use by faculty, graduate students, and postdoctoral fellows.

The Laboratory is uniquely equipped to study highly infectious diseases. It maintains its own engineering staff, machine shops, photography laboratory, and service facilities required for research in the fields of aerobiology, microbiology, public health and related sciences. Inquiries concerning the Laboratory should be addressed to: Director, Naval Biological Laboratory, Building 844-A, Naval Supply Center, Oakland, California 94625.

Laboratory of the Rockefeller University

This Laboratory is maintained by the Rockefeller University for the research of Professor John H. Northrop. The funds are supplied entirely by the Rockefeller University and are administered partly through the Rockefeller University and partly through the Department of Medical Physics, Donner Laboratory, and the Department of Medical Microbiology and Immunology, School of Public Health.

It has no official academic duties. The work at present is concerned with the origin of bacterial viruses.

Space Sciences Laboratory

The Space Sciences Laboratory is a multidisciplinary laboratory engaged in basic research in the physical, engineering, biological, environmental, and social sciences on problems related to and motivated by the exploration of space.

Its major purpose is for faculty and graduate student research, and the projects are related to curricular programs. The program covers a broad range of work in the space science. Current projects in fields of engineering comprise studies in systems theory, microwave radiometers, and geomagnetism. There are extensive programs in space physics, solar terrestrial relationships, exobiology (extra-terrestrial life), and biological systems in the interplanetary environment. A program of satellite observations is in progress as part of a broad effort to utilize the resources of our planet within the framework of man’s environmental requirements.

The Laboratory supports a program in the social sciences in studies connected with specific technological activities, supported by the space program.

The programs are supported by University funds as well as grants and contracts from the research branches of the U.S. Department of Defense, the National Science Foundation, and the National Aeronautics and Space Administration. The main center is the Space Sciences Laboratory on the hill area above the Berkeley campus; additional facilities are located in various parts of the campus and at the University’s Service Facility in Richmond.

Statistical Laboratory

(See under Statistics)
Virus Laboratory

The Virus Laboratory was established by The Regents in 1948 as a regularly budgeted research organization within the University for the purpose of conducting research on the biochemical, biophysical, and biological properties of animal, bacterial, and plant viruses. Since that time it has become one of the foremost virus research centers in the world in which work on all kinds of viruses is in progress. Major achievements include a new technique for freeze-drying preparations for electron microscopy, the crystallization for the first time of a virus affecting animals or humans (poliovirus), the discovery that preparations of nucleic acid from tobacco mosaic virus possess virus activity, the reconstitution of a virus from its component parts, the demonstration of subunits as a characteristic feature of the architecture of virus particles and of certain enzymes, the development and implementation of optical systems for the ultracentrifuge, the discovery of the chemical nature of virus mutation, the elucidation of the exact sequence of the 158 amino acids of tobacco mosaic virus particles, and the discovery of ribosomes. Research on virus-cancer relationships, cellular control mechanisms, and on virus-cell interactions in tissue cultures is now being conducted.

Scientists come to the Virus Laboratory from all parts of the world, and each year representatives from many foreign countries have been in attendance for postdoctoral training. Fourteen members of the staff hold appointments in the Department of Molecular Biology and in other academic departments and have supervised the work, including research in the Virus Laboratory, of sixty-one graduate students who have received the Ph.D. degree. During the present year there are forty-one postdoctoral students plus forty-seven graduate students working toward the Ph.D. degree with staff members in the Virus Laboratory. Training in fundamental virology is, therefore, being offered at the predoctoral and the postdoctoral levels.

Additional Laboratories

(Described under departmental headings, see Index)

Cancer Research Genetics Laboratory  Operations Research Center
Earthquake Engineering Research Center  Radio Astronomy Laboratory
Electronics Research Laboratory  Sanitary Engineering Research Laboratory
Forest Products Laboratory  Sea Water Conversion Laboratory
Geotechnical Engineering Laboratories  Soil Mechanics and Bituminous Materials Laboratory
Giauque Low-Temperature Laboratory  Statistical Laboratory
Hydraulic Engineering Laboratory  Structural Engineering Materials Laboratory
Industrial Engineering Laboratories  Thermodynamics Laboratory
Low-Temperature Laboratory
Naval Architecture Laboratory
Nuclear Engineering Laboratory

MUSEUMS AND BOTANICAL FACILITIES

(See Index)

Museum of Anthropology  Botanical Garden
Museum of Paleontology  Herbaria
Museum of Vertebrate Zoology
Center for Research and Development in Higher Education

The central purpose of the Center for Research and Development in Higher Education is to assist individuals and organizations responsible for American higher education to improve the quality, efficiency, and availability of education beyond the high school. The Center provides opportunities for research on problems of higher education by faculty members, visiting scholars, graduate students and the Center's own research staff. It is authorized to hold conferences on higher education in cooperation with other University agencies or outside educational organizations, to provide fellowships or internships, to publish research reports and conference proceedings, and to work cooperatively with higher education institutions and educational agencies throughout the U.S. in reviewing the findings from research and their implications for higher education.

In the recent past the Center's activity was channeled into three major areas of research: (1) educational impact and student development, (2) the viability of institutional structures and functions for the future of higher education, and (3) developmental projects directed to the improvement of higher education through the utilization of research findings. In the future the Center will concentrate its research and development on the “new” students who are entering institutions of higher education, in the changing patterns of governance within colleges and universities and on the interrelationships between educational programs intended for these “new” students and the decision-making process.

The Center is also currently engaged in a number of extensive research projects involving the cooperation of high schools, colleges and universities in several states. These include studies of student development in small liberal arts colleges and large, complex institutions; studies of factors related to attendance at various types of higher education institutions; a longitudinal study of how, when and why high school students make educational career decisions which lead to different outcomes after they leave school; and a study of statewide planning in higher education.

Center for the Study of Law and Society

The Center for the Study of Law and Society conducts field studies of law in action and of social factors bearing on the development of law and legal theory; the Center also sponsors colloquia and study groups for faculty and students interested in this work. Current areas of interest include: perspectives on law enforcement (e.g. “law and order”); sentencing decisions; legal processes within large organizations (e.g., the university); and the organization of the civil and criminal justice systems. Historical and comparative studies are encouraged.

The Center is primarily a facility for faculty and students in the social sciences, including the School of Law, but it also serves some visiting scholars and has a small professional research staff. Some stipends for faculty members are available, as well as training for graduate students through appointment as research assistants.

* Additional facilities are described under departmental heading. See list on page 132.
Computer Center

The Computer Center serves the entire campus by (1) providing and operating a system to meet the computing and information processing needs of the campus and (2) conducting research in computer science.

The principal components of the system are the computer (a dual Control Data 6400 system), the operating and programming systems (FORTRAN, ALGOL, Assemblers and others) and the user-file storage (disks and tapes). The Center also has an IBM 360/40 off-line computer for peripheral operations.

A program library and a consultation service are maintained to provide information about the operating and programming systems and to assist users to secure appropriate programs for the solution of problems or the processing of data. Assistance and consultation are also available on the formulation of problems and the suitability of programs.

Instruction in programming is available through regular courses offered by several academic departments and University Extension.

In addition to programming consultation, the Center undertakes programming tasks for users. Those having programming needs may call upon the Center's application programming group for service. The Center also provides a key-punching service for users of the computer.

One of the Center's major efforts is now devoted to developing an advanced computing system which will permit interplexed operations from a large number of remote input-output stations and peripheral data processors.

Center for Research in Management Science

The Center for Research in Management Science, formally established in May, 1961, is composed of faculty members drawn from Business Administration, Economics, and related disciplines, who are actively engaged in research on problems of management. Research topics include: theoretical and empirical studies of organizations, experimental studies of individual and group decision making, decision rules for optimization, topics in mathematical economics, and applications of computer technology to organizational problems.

The Center, located in Barrows Hall, provides financial aid to doctoral candidates by employing them as research assistants on faculty projects, and thus also places them in a research environment for training with research workers in the field.

Research facilities include the Management Science Laboratory located in Barrows Hall. This laboratory, partly financed by the National Science Foundation, offers facilities for group experiments in and for research in man-computer interactions.

Visiting scholars join the staff during the summer or for varying periods during the academic year.

Both formal seminars and informal workshop sessions are held regularly to review work in progress and to hear distinguished visitors.

Earthquake Engineering Research Center

(See under Engineering Laboratory Facilities)
Survey Research Center

The Survey Research Center is charged with assisting faculty and students in all social science departments and schools, in the design, development, and execution of research using survey methods. Organized around a method rather than a single substantive topic, the Center conducts research in a wide variety of fields. Projects are currently under way in education, political behavior, religion, prejudice, consumer behavior, and poverty. The Center also carries on a program of methodological research to increase the precision and the range of applicability of survey procedures and contributes to advanced training in social research by providing laboratory resources and research apprenticeships for graduate students.

The Center seeks as well to serve the University and the community-at-large wherever survey research can contribute to the formulation of educational and public policy.

Operations Research Center

The Operations Research Center is a research unit of the College of Engineering which is concerned with the problems of optimal operation of complex systems and the development of necessary theoretical methodology.

Typical research topics are mathematical programming, combinatorial problems, reliability theory, network flow theory, statistical inference in stochastic problems, critical path scheduling, programming under uncertainty, theory of cost and production functions, large-scale control systems, and stochastic congestion problems. Applied research topics include water resources management, waste disposal systems, traffic and transportation systems, highway accident systems, systems reliability, and models of computer service systems. Because of the growing interest and importance of efficient methods of utilizing governmental resources, increased emphasis is being placed on socio-engineering applications rather than on individual industrial problems.

The research efforts of the Center are closely integrated with the graduate programs of the Department of Industrial Engineering and Operations Research. Related graduate courses are listed under the department and also listed as part of the Engineering Science curriculum under the Operations Research options. Faculty, visiting scholars, postgraduate research fellows, and graduate research assistants participate in the program of the Center.

The Institute of Transportation and Traffic Engineering

State law provided for the establishment of this Institute, which has units on both the Berkeley and Los Angeles campuses. It conducts research related to the planning, design, and operation of highway, air, urban, and other transportation systems. At Berkeley, most of its staff members serve on the faculty in the Division of Transportation Engineering of the Department of Civil Engineering, which offers graduate programs leading to master's and doctoral degrees. The individual graduate student can follow any of a wide range of interests through course selections in these programs. Institute research extends from the relatively precise applied sciences of materials and structures to such fields as transportation systems analysis and design, and engineering economics and adminis-
Some Institute research is independent, some in cooperation with outside agencies, such as the Federal Aviation Administration and the California Division of Highways. Many graduate students in transportation engineering study under fellowships or other awards; others participate in Institute research through part-time employment. The Institute maintains laboratories, field research equipment, and an outstanding research library.

**White Mountain Research Station**

The White Mountain Research Station provides basic laboratory and living accommodations for faculty and students requiring teaching and research facilities in the high altitude environment. Since its inception in 1950 the Station has been the site of a wide variety of studies in the agricultural, biological, and physical science fields.

The Station comprises three separate locations in the White Mountain Range east of Bishop, California: the Crooked Creek Laboratory, 10,150 feet above sea level; the Barcroft Laboratory, 12,470 feet; and the Summit Laboratory, 14,250 feet. In addition, the Owens Valley Laboratory in Bishop, elevation 4,050 feet, serves as the local headquarters. All but the Summit Laboratory are kept open the year around.

Maintenance support is provided jointly by the University, the Office of Naval Research, and the National Aeronautics and Space Administration. A research physiologist and five maintenance men make up the permanent resident staff. Administrative headquarters are located in Berkeley, and inquiries concerning use of the Station may be addressed to Director, White Mountain Research Station, 2251 College Avenue, University of California, Berkeley, California 94720.

**Foreign Language Training—U. S. Defense Language Institute**

University of California graduate students and faculty have a unique opportunity to acquire fluency in foreign languages through the cooperation of the U. S. Defense Language Institute (West Coast Branch), Presidio of Monterey. Courses in twenty-five languages are available at the Institute.

Each year thirty persons certified by the University of California, Language Training Advisory Committee, are admitted on a “space available” basis.

Complete information is available from the Graduate Division of any University of California campus, or by writing to the Secretary, Language Training Advisory Committee, University of California, Santa Cruz 95060.

**Additional Units**

(Described under departmental headings, see Index.)

<table>
<thead>
<tr>
<th>Education Field Service Center</th>
<th>Sagehen Creek Wildlife and Fisheries Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giannini Foundation</td>
<td>Seismographic Stations</td>
</tr>
<tr>
<td>Hastings Reservation</td>
<td>University Art Gallery</td>
</tr>
<tr>
<td>Leuschner Observatory</td>
<td>University of California Archaeological Research Facility</td>
</tr>
<tr>
<td>Lick Observatory</td>
<td>Wildland Research Center</td>
</tr>
<tr>
<td>Minerals Thermodynamics Experiment Station</td>
<td></td>
</tr>
</tbody>
</table>
General Interest Courses for Upper Division Students


**Business Administration**  110, Legal Environment of Business; 111, Social and Political Environment of Business; 137, Economics of Insurance; 150, Organizational Behavior; 154, Industrial Relations; 180, Introduction to Real Estate and Urban Land Economics.

**City and Regional Planning**  111, Introduction to Housing; 122, The Black Ghetto in Urban Structure.


Education 110, Learning and the Learner; 130, The School in America; 170, Introduction to Adult Education; 192, Social Foundations of Education; 193, Psychological Foundations of Education; 194, Humanistic Foundations of Education.


Forestry and Conservation 102, Forest Photogrammetry and Photo Interpretation; 111, Analysis of the Forest Economy; 115, Introduction to Forest Policy; 116, Recreational Use of Forests and Wildlands; 122, Forest Environment and Microenvironmental Influences; 123, Physiological Plant Ecology; 124, Plant Community Ecology; 132, Mechanical Processing of Wood; 141, Principles of Range Management; 142, Range Plants; 143, Range Animal Nutrition and Management; 175, Wildlife Populations; 177, Case Histories in Wildlife Management.


Geography 100A–100B, Principles of Cultural Geography; 103, The Relations between Nature and Culture; 110A–110B, Principles of Economic Geography; 112, Historical Geography of Transportation; 114, Industrial Localization; 120, Urban Geography; 130A, Natural Resources and Population; 130B, Open Land as a Natural Resource; 135, Energy as a Resource; 150, California; 151, Western United States; 152, Historical Economic Geography of the Eastern United States; 153, Canada; 170, The Arid Lands; 171, The Humid Tropics; and all of the foreign-area regional survey courses in the 150 and 160 series.

German 160, Issues and Problems in German Literary and Cultural History; 190, Freud and Literature.

Italian 103A–103B, Introduction to Italian Literature; 109A–109B–109C, Dante’s Divine Comedy; 110A–110B, Italian Literature of the Thirteenth and Fourteenth Centuries; 111, Italian Literature of the Fifteenth Century; 112A–112B, Italian Literature of the Sixteenth Century; 114, Italian Literature of the Eighteenth Century; 115A–115B, Italian Literature from 1800 to 1850; 116, Italian Literature from 1850 to 1900; 117A–117B, Italian Literature of the Twentieth Century; 130, Dante’s Divine Comedy; 140, Petrarch and Boccaccio.

Landscape Architecture  125, History and Literature of Landscape Architecture; 100, Survey of Landscape Architecture.

Linguistics  106, Transformational Grammar; 145, Comparative and Historical Linguistics.


Optometry  Optometry 100: History of Optometry; Optometry 128: Introduction to Pathology; Physiological Optics 101: Anatomy of Eye and Orbit; Physiological Optics 102: Dioptrics of the Eye; Physiological Optics 125: Vegetative Functions of the Eye; Physiological Optics 129: Motility of the Eye; Physiological Optics 132: Visual Stimuli; Physiological Optics 151: Monocular Sensory Processes of Vision; Physiological Optics 160: Binocular Vision and Space Perception.


151A-151B-151C-151D, Ethos and Audience: Renaissance, 18th Century, 19th Century and 20th Century; 158, Legal Trial and Its Cultural Context; 159, Law and Social Institutions.

**Scandinavian** 100A-100B-100C, History of Scandinavian Literature; 106, History of Scandinavian Drama up to 1900; 107, The Plays of Ibsen; 108, Strindberg and His Writings; 109, Scandinavian Drama of the Twentieth Century; 120A-120B, The Novel in Scandinavia; 125, Old Icelandic Literature; 160, Scandinavian Mythology; 171, Contemporary Swedish Literature; 175, Kierkegaard.


**Hungarian** 185A–185B–185C. Survey of Hungarian Literature.