HOW TO USE THIS CATALOG

This catalog covers academic years 1997-98 and 1998-99. Most of the information within does not change from year to year. For information that does, references are given for current sources.

In the Courses and Curricula section, the notations indicating when courses will be offered and the faculty who will teach them apply to the 1997-98 academic year only. Not all the courses that appear are offered every year. Current course offerings are listed in the Schedule of Classes, published twice a year well before the beginning of each semester. The Schedule of Classes also contains a section entitled "Changes and Additions to the General Catalog," which will alert you to new developments in departmental requirements and curricula.

The annual college and school announcements are another important source of more current and detailed information than is furnished in this catalog, as are departmental handouts and publications from individual administrative units. Telephone numbers and addresses are provided within.

Perhaps the best source of current information is the Berkeley home page, located at http://www.berkeley.edu. This catalog is online, and many individual departments and administrative units have put up Web sites. Most of the Web addresses appear on the following pages. The courses in the online General Catalog are updated roughly every three months; other data are updated on a less regular basis.

For changes that have occurred since publication of the 1997-99 General Catalog, please refer to the online catalog at http://www.berkeley.edu.
I came to Berkeley as a naive adolescent and still remember the exhilaration on first reading the Berkeley catalog, which seemed to me the size of a telephone book, containing unbelievably attractive travel invitations to new intellectual worlds.

—Daniel Koshland, Jr., ’41
Professor Emeritus of Biochemistry
As vice chancellor for undergraduate affairs, I recently met several high school students who had been admitted to Berkeley. These students were impressive—eager, poised, diverse, disciplined, brilliant. One of them was fascinated with bioengineering, and another wants to combine his interest in physics with his love of theater. Another, at 17, had substantial knowledge of fiber optics, and yet another had spent hundreds of hours volunteering in hospitals and homes for the aged. I found their dedication and quality of mind deeply encouraging. These students represent Berkeley’s student body in all of its energy, diversity, and public spirit, and we dedicate the 1997-99 General Catalog to them.

Our students bring an intellectual exuberance and joy of discovery that invigorate and enrich the Cal community. Those I met, while focused on specific career goals, have already made intellectual connections between their intended fields of study and larger life issues: ethical debates in political and social sciences, and moral quandaries in science and medicine. Berkeley, where the curriculum and faculty research create an environment that encourages bridging disciplines, is the ideal place for them to continue making connections.

This catalog displays Berkeley’s educationally rich environment and celebrates our students in all their intellectual rigor, whether in the sciences, public service, performing arts, humanities, sports. These young people are California’s most important resource. As a public university we are the steward of this resource. We are committed to providing the best education possible, to maintaining the diversity that reflects the population of this state, and to keeping Berkeley affordable so that all California students can have a fair shot at educational opportunity. If we succeed, they will succeed.

Genaro Padilla
Vice Chancellor for Undergraduate Affairs

Spring 1997
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While every effort has been made to ensure accuracy, all fees, services, courses, course descriptions, semesters in which courses are offered, teaching assignments, and degree requirements in this catalog are subject to change without notice. Please consult with department offices for up-to-date information. General information: (510) 642-6000; http://www.berkeley.edu

General Catalog, University of California, Berkeley, 1997-99.

All qualified students—regardless of race, sex, color, creed, age, handicap, sexual orientation, or national origin—are welcome.

To obtain the General Catalog by mail, write to the ASUC Store, University of California, Berkeley, Attn: Mail Order Department #4504, Berkeley, CA 94720-4504; or telephone (510) 444-6251.
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<td>Spring Semester Ends</td>
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Note: Dates for the 1998-99 academic year had not received final approval when this catalog went to press. For those dates, see the Schedule of Classes, the 1998-99 college and school announcements, or the Berkeley home page at http://www.berkeley.edu.
Contents
Helpful Publications
General Catalog & Schedule of Classes
by mail:
ASUC Textbook Store
University of California, Berkeley
Berkeley, CA 94720-4504
Attn: Mail Order Dept.
by telephone:
call 444-6251
Resource: A reference guide for new Berkeley students
Office of New Student Programs
137 Golden Bear Center, 6/42-4970
College and School Announcements
(available at colleges and schools)
University of California, Berkeley Policies Applying to Campus Activities, Organizations, and Students
Student Activities and Services
102 Sproul Hall, 642-5171

University of California, Berkeley
Berkeley, CA 94720
Area Code 510
General information: 642-6000
http://www.berkeley.edu/
Admissions, Graduate
309 Sproul Hall, 642-7405
http://violet.berkeley.edu/~gradweb/
Admissions, Undergraduate
110 Sproul Hall, 642-3175
TTY/TDD: 642-8396
http://www.uga.berkeley.edu/ouars/
Advising, Career and Graduate School
2111 Bancroft Way, 642-1716
TTY/TDD: 642-6252, 642-5373
Fax: 642-6987
http://www.uga.berkeley.edu/cgss/
Advising, Student Life
140 Golden Bear Center, 642-7224
Fax: 642-9078
http://www-slc.uga.berkeley.edu/slas/slas.html
Alumni Association
1 Alumni House, 642-7026, 1-888-CAL-ALUM
Fax: 642-6252
http://www.alumni.berkeley.edu/

Associated Students (ASUC)
200 Eshleman Hall, 642-1431
Fax: 643-6396
http://www.asucb.org/

Athletics, Intercollegiate
210 Memorial Stadium, 642-5363
2223 Fulton St., Ticket office 62-BEARS
Fax: 643-7778
http://www.calbears.com/

Berkeley Art Museum
2626 Bancroft Way, 642-0808
Fax: 642-4889
http://www.bampfa.berkeley.edu/

Botanical Garden
200 Centennial Drive, 642-0849, 642-9856
Fax: 642-5045
http://www.mip.berkeley.edu/garden

Career and Graduate School Services
2111 Bancroft Way, 642-1716
TTY/TDD: 642-6252, 642-5373
Fax: 642-6987
http://www.uga.berkeley.edu/cgss/

Child Care Services
2537 Haste Street, 642-1827
Fax: 642-8033
CPS@uhs.berkeley.edu
Counseling and Psychological Services
2222 Bancroft Way, 642-9494
Fax: 642-2368

Disabled Students’ Program
230 Golden Bear Center, 642-0518
TTY/TDD: 642-6376
Fax: 643-9686
http://dsp.berkeley.edu/

Education Abroad Program
160 Stephens Hall, 642-1356, 642-1790
Fax: 643-8370
http://violet.berkeley.edu/~bpsa/home.html

Educational Opportunity Program and Affirmative Action (EOP/AA)
140 Golden Bear Center, 642-7224
Fax: 642-9078

Financial Aid, Graduate
201 Sproul Hall, 642-0485
Fax: 642-5731
http://uga.berkeley.edu/fao/gpuint.htm

Financial Aid, Undergraduate
211 Sproul Hall, 642-6442
Fax: 643-5526
http://uga.berkeley.edu/fao/default.htm

Health Services
Tang Center, 2222 Bancroft Way
Appointments and information, 642-2000
Clinic I, 643-7117
Clinic II, 643-7109
Clinic III, 643-7110
Clinic IV, 643-9133
Specialty Clinic, 643-7177
Student Health Insurance Plan, 642-5700
Urgent Care, 642-3188
http://www.uhs.berkeley.edu/
Vision Care
School of Optometry Clinics:
200 Minor Hall, 642-2020
Fax: 642-4025
Tang Center, 643-2020

Housing, Campus
2401 Bowditch Street, 642-4108
Fax: 643-7126
e-mail: reshall@uclink.berkeley.edu
http://www.housing.berkeley.edu/calstyle/

Housing, Off-Campus
2405 Bowditch Street, 642-3642
Fax: 642-4026
e-mail: homeinfo@uclink.berkeley.edu

Info-BEARS
642-9400

Information, Campus
642-INFO (4636)

Interfraternity Council (Fraternities)
102 Sproul Hall, 643-6919

International Student Admissions, Graduate
309 Sproul Hall, 642-7405
Fax: 643-1524
http://violet.berkeley.edu/~gradweb/

International Student Admissions, Undergraduate
110 Sproul Hall, 642-3246
Fax: 642-7333
ouars@uclink

International Student and Scholar Advising
Services for International Students and Scholars
International House
2299 Piedmont Avenue, 642-2818
Fax: 643-7289
e-mail: sis@siss@uclink.berkeley.edu

Photo, near right: Pacific Film Archive, film depart-
ment of the Berkeley Art
Museum, offers nightly pro-
grams of international cine-
ma to the public. Pictured
here is a scene from
"Cassandra Cat," a 1963
Czech film directed by
Vojtech Jasny.

Photo, far right: Soda Hall,
completed in 1994, is a
state-of-the-art center for
research and teaching in
computer science.
Library Information
Main Library Information Desk, 643-9999
TTY/TDD: 642-0704
http://www.lib.berkeley.edu/

Orientations, Undergraduate
Office of New Student Services
CalSO (Cal Student Orientation)
Summer Bridge
137 Golden Bear Center, 642-4970
Fax: 642-9078

Pacific Film Archive
2625 Durant Avenue, 642-1412
TTY/TDD: 642-8734

Panhellenic Association, College (Sororities)
102 Sproul Hall, 643-6916
Fax: 642-1672

Personnel Office
University Hall, 642-9046
Personnel: 2199 Addison Street entrance;
Staff Employment: 2200 University Avenue entrance
TTY/TDD: 643-9421
Fax: 642-2888
http://www.berkeley.edu

Police
1 Sproul Hall, 642-6760
Emergency, 9-911 (or 911 from non-campus extensions)
Fax: 642-6434
http://gamet.berkeley.edu:4254/police/homepage.htm

Relations with Schools, Undergraduate
Admission and
110 Sproul Hall, 642-3175
TTY/TDD: 642-8396
http://www.uga.berkeley.edu/ouars/

Sexual Assault Services
2222 Bancroft Way
Social Services: Sexual Assault Counseling and
Advocacy, 642-6074
Fax: 643-0211
Health Promotion: Sexual Assault Prevention,
642-7202
Medical Care Information, 642-3188
Fax: 634-7030

Shuttle Escort Service
642-WALK (9255)

Sports, Intramural and Recreational
Recreational Sports Facility, 2301 Bancroft Way,
642-8342
Fax: 642-0990
http://amber.berkeley.edu:4207/RSF/athmain.htm

Strawberry Canyon Recreation Area
5 Haas Clubhouse, Centennial Drive, 643-6720
Fax: 642-8343

Student Activities and Services
102 Sproul Hall, 642-5171
Fax: 642-1672

Student Learning Center
198 Golden Bear Center, 642-7332
Fax: 643-7879

Summer Sessions
22 Wheeler Hall, 642-5611
Fax: 642-2877
http://www-summer.berkeley.edu/
e-mail: summer@uclink.berkeley.edu

Tours, Campus
Visitor Services, 101 University Hall, 642-5215
Fax: 632-3423
http://www.urel.berkeley.edu/urel_1/VisitorsCenter/
visitor.html
e-mail: visitor_info@pa.urel.berkeley.edu

Transcripts
Office of the Registrar, 120 Sproul Hall, 642-4721
Fax: 643-8050
http://registrar.berkeley.edu:4202/

University Extension
1995 University Avenue, 642-4111
Fax: 642-0374
http://www.unex.berkeley.edu:4243/

Visitor Services
101 University Hall, 642-5215
Fax: 642-3423
http://www.urel.berkeley.edu/urel_1/VisitorsCenter/
visitor.html
e-mail: visitor_info@pa.urel.berkeley.edu

Women's Resource Center
250 Golden Bear Center, 642-4786
Fax: 642-9078
http://www.aad.berkeley.edu/uga/osl/wrc/
The University's first buildings stood almost alone in the midst of orchards and wheat fields. Along with the rapid advance of the state of California, the University grew apace in resources, faculty, students, and programs. And while other campuses of the University have since challenged and sometimes bested Berkeley in size, Berkeley maintains its place in the forefront of international centers of learning.

South Hall, the Berkeley campus, and its environs, 1874. The first building at Berkeley, South Hall today houses the School of Information Management and Systems.
History of the University

The roots of the University of California go back to the gold rush days of 1849, when the drafters of the State Constitution, a group of vigorous and farsighted people, required the legislature to “encourage by all suitable means the promotion of intellectual, scientific, moral and agricultural improvement” of the people of California. California had few families in 1849 and few children to educate, but these early planners dreamed of a university which eventually, “if properly organized and conducted, would contribute even more than California’s gold to the glory and happiness of advancing generations.”

The university that was born nearly 20 years later was the product of a merger between the College of California (a private institution) and the Agricultural, Mining, and Mechanical Arts College (a land grant institution). The College of California, founded by former Congregational minister Henry Durant from New England, was incorporated in 1855 in Oakland. Its curriculum was modeled after that of Yale and Harvard, with the addition of modern languages to the core courses in Latin, Greek, history, English, mathematics, and natural history. With an eye to future expansion, the board of trustees augmented the college’s Oakland holdings with the purchase of 160 acres of land four miles north, on a site they named Berkeley in 1866. This original tract was to be considerably expanded over the years.

While the College of California was in its infancy, efforts continued in the state legislature to create a public educational institution, and in 1866 the legislature took advantage of the federal Morrill Land Grant Act of 1862 to establish the Agricultural, Mining, and Mechanical Arts College. The college was to teach agricultural, mechanical arts, and military tactics “to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.” Scientific and classical studies were not to be excluded but were of secondary importance.

The boards of trustees of the College of California and the Agricultural, Mining, and Mechanical Arts College decided to merge the two schools to their mutual advantage—one had land but insufficient funds and the other had ample public funds but no land—on the condition that the curricula of both schools be blended to form “a complete university.” On March 23, 1868, the governor signed into law the Organic Act that created the University of California. The new university used the former College of California’s buildings in Oakland until South Hall and North Hall were completed on the Berkeley site (South Hall is still standing), and in September 1873 the University, with an enrollment of 191 students, moved to Berkeley.

Fiscal problems plagued the new University, and it was not until the 20-year presidency of Benjamin Ide Wheeler beginning in 1899 that finances stabilized, allowing the University to grow in size and distinction. Early in this period Phoebe Apperson Hearst, one of the University’s most generous benefactors, conceived of and financed an international competition for campus architectural plans that, she stipulated, “should be worthy of the great University whose material home they are to provide for.”

The competition, won by Emile Bénard of Paris, brought Berkeley not only a building plan but worldwide notoriety. The London Spectator wrote, “On the face of it this is a grand scheme, reminding one of those famous competitions in Italy in which Brunelleschi and Michael Angelo took part. The conception does honor to the nascent citizenship of the Pacific states. . . .” At Oxford University, which at the time was strapped for funds, a Latin orator said, “There is brought a report that in California there is already established a university furnished with so great resources that even to the architects (a lavish kind of men) full permission has been given to spare no expense. Amidst the most pleasant hills on an elevated site, commanding a wide sea view, is to be placed a home of Universal Science and a seat of the muses.”

John Galen Howard, the supervising architect charged with implementing the Bénard plan, took advantage of his “permission to spare no expense” and developed a style of architecture that reinterpreted the grace, dignity, and austerity of classical lines to suit the California environment. Some of the campus’s most elegant and stately structures were built during Howard’s tenure, among them the Hearst Memorial Mining Building (1902-7), the Hearst Greek Theatre (1903), California Hall (1905), Doe Library (1911-17), the Campanile (1914), Wheeler Hall (1917), Gilman Hall (1917), and Hilgard Hall (1918).

President Wheeler, a classical scholar and able administrator, attracted library and scholarship funds, research grants, and a distinguished faculty to the University, and its reputation grew, particularly in the fields of agriculture, the humanities, and engineering. Many new departments were added in the early years of his presidency, and existing departments expanded. Summer sessions were begun in 1899 to train physics and chemistry teachers and before long broadened their scope.

The University grew with the rapidly expanding population of California and responded to the educational needs of the developing state. In the early 1900s the University’s new College of Commerce (now the School of Business Administration) trained students for export trade with the Orient and funneled graduates into industries and businesses throughout the state. During the same period a foreign service training program was developed in response to State Department concern about the poor quality of consular personnel.
In 1930 Robert Gordon Sproul began a presidency that lasted three decades. His principal concern was academic excellence, and he was committed to attracting brilliant faculty in all fields. His success was particularly evident in the physical and biological sciences. In the 1930s research on campus burgeoned in nuclear physics, chemistry, and biology, leading to the development of the first cyclotron by Ernest O. Lawrence, the isolation of the human polio virus, and the discovery of all the artificial elements heavier than uranium.

All of Northern California, with its great variety of cultural and recreational opportunities, is within easy reach. San Francisco is just over the bridge; the wine country and the Point Reyes National Seashore are a short drive north; the Monterey Peninsula and Big Sur, a short drive south; and Lake Tahoe, the Sierra Nevada mountains, and Yosemite National Park are close enough for weekend skiing and backpacking trips.

Tradition of Excellence

Berkeley is internationally noted for its academic excellence. Its faculty includes 7 Nobel laureates, 118 members of the National Academy of Sciences, 69 members of the National Academy of Engineering, and more NSF Young Investigators than there are at any other university in the country. In national surveys, Berkeley’s academic departments consistently rank among the top five in the country.

By any standard, Berkeley ranks as one of the world’s leading intellectual centers, renowned for the size and quality of its libraries and laboratories, the scope of its research and publications, and the distinction of its faculty and students. More students who earn bachelor’s degrees at Berkeley complete Ph.D.’s than graduates of any other university in the country.

Superior Research

The range of research projects at Berkeley is varied, reflecting the diversity of disciplines represented. The campus provides a distinctive environment in which faculty and students seek to expand fundamental knowledge of human nature, society, and the natural world.

About Berkeley

A Campus Chronology

1855: A private institution called the College of California is incorporated in Oakland.
1860: The College of California opens its doors in Oakland to 10 freshmen.
1866: The trustees of the College of California vote to name the new town that will surround the college at its permanent site after Irish clergyman and philosopher George Berkeley.
1868: The governor signs a bill by which the College of California will disincorporate and become the core of a state-supported University of California. March 23 is thereafter celebrated as Charter Day of the University.
1869: The University begins instruction of 38 male students in Oakland.
Henry Durant named first president of the University.
1870: Regents vote to admit women to the University on equal terms with men.
Seventeen women register.
1871: Twelve young men, later renamed the California Alumni Association, receive the first diplomas of the University.
1872: The first Greek letter society established at the University is the Iota chapter of Zeta Psi.
1873: Twelve young men, thereafter known as the “12 apostles,” receive the first diplomas of the University.
First classes open at Berkeley.
(continued on next page)

At the turn of the century, there were four University buildings at Berkeley (from left): North Hall, Mechanic Arts Building, Bacon Hall, and South Hall. Only South Hall remains.
1887: The Associated Students of the University of California is formed to resolve conflicting interests of numerous student societies.

1905: The University purchases a collection of western Americana and Spanish-American historical materials from Hubert Bancroft, and founds the Bancroft Library, now one of the world’s outstanding collections.

1912: Doe Library is dedicated.

1913: Sather Tower, one of the campus’s principal landmarks, is completed.

1914: The Jane K. Sather Tower, more popularly known as the Campanile for its resemblance to the campanile of St. Mark’s Plaza in Venice, takes its place as Berkeley’s chief landmark.

1929: The first residence hall for students, Bowles Hall, opens. It was funded by private gifts.

1930: International House, one of four worldwide funded by John D. Rockefeller, opens at Berkeley.

1931: Ernest Lawrence and two colleagues discover plutonium in experiments conducted in Gilman Hall.

1941: Professors Glenn Seaborg and Edwin McMillan and two colleagues discover plutonium in experiments conducted in Gilman Hall.

Research programs at Berkeley are conducted within teaching departments and organized research units (ORUs). The latter are established and administered separately from the teaching units. ORUs are interdisciplinary in nature and are organized around the work of a group of faculty and graduate students whose research interests transcend traditional disciplinary boundaries. They do not offer courses of instruction or degrees, although several work in conjunction with interdepartmental instruction programs which lead to bachelor’s or advanced degrees. ORUs provide invaluable experience for graduate students in basic and applied research and greatly enhance Berkeley’s educational program and the overall academic quality of the University.

Please see the Appendix for a listing of the campus ORUs.

Commitment to Teaching

Every year, the Berkeley campus honors several of its outstanding faculty members by presenting them with the Distinguished Teaching Award. More than 175 faculty members in 45 departments have been recognized in this way for their outstanding teaching. (Recipients of Distinguished Teaching Awards have daggers by their names in the “Courses and Curricula” section of this catalog.)

At a large institution often known more for its research, such recognition serves to remind us all of the importance of teaching and the value we place on it. Students who attend Berkeley have the benefit of learning from world-renowned theorists and researchers who are also often distinguished teachers.

Recipients of past awards have pointed out that their research is often enhanced by the questions and responses of their students in the classroom, while at the same time, the excitement of generating new ideas and discoveries in research stimulates them to become better teachers.

Good teachers do more than convey knowledge in a field. They clarify for students the relationships between their subject and other fields of knowledge; they ignite in their students a desire to learn; and as a consequence they often have a life-long impact on their students’ lives and careers.

Good teaching is, of course, not limited to the people who have received Distinguished Teaching Awards. Every year, many departments nominate one or more of their faculty as distinguished teachers. You will encounter excellent teachers in all departments, all disciplines, in large classes and in seminars.

There is no one way to teach well; the styles you will encounter will be as varied as the courses you take, from eye-opening lectures to discussion sections in which you will clarify and define your own ideas. In teaching, as in every aspect of Berkeley, diversity is the key to a rich and challenging educational experience.

Student Diversity

The quality of Berkeley’s student body complements the stature of its faculty. Most students are Californians, but nearly every state and 100 foreign countries are represented. The student body can best be characterized by its diversity; more than half of the students are minorities, helping to produce the wide range of opinion and perspective essential to a great university. Many programs, such as African American, Asian American, Chicano, and Native American Studies, reflect the diversity, as does the opportunity students have to design their own major if their interests do not match any of the 100 majors offered.

Organization and Administration

The University of California

The University of California comprises nine campuses, each with a distinctive character. The San Francisco campus was added to the University in 1873, the Los Angeles campus in 1919, Riverside in 1954, Santa Barbara in 1958, San Diego and Davis in 1959, and Santa Cruz and Irvine in 1965. The campuses have three law schools, five medical schools, and schools of architecture, business administration, education, engineering, and many others.

The nine campuses have a full-time faculty of about 7,000 and the total enrollment is about 164,000 students, most of them California residents. Nearly one quarter are graduate students. Some 150 laboratories, extension centers, and research and field stations strengthen teaching and research while providing public service to California and the country.

Administration

Under the State Constitution, the government of the University is entrusted to the Board of Regents. The regents appoint the president of the University, and with the president’s advice, appoint the chancellors, directors of major laboratories, provosts, and deans who administer the affairs of the individual campuses and other divisions of the University. Authority in academic matters is delegated by the regents to the Academic Senate, which determines academic policy for the University as a whole.

The Board of Regents includes seven ex officio board members and 18 members who are appointed by the governor for 12-year terms after consultation with an advisory committee. In addition, the regents appoint a student regent for a one-year term as a voting board member with full rights of participation. The chair and vice chair of the Academic Council serve as faculty representatives to the board and participate fully in all
discussions. A constitutional amendment provides that "Regents shall be able persons broadly reflective of the economic, cultural, and social diversity of the State, including ethnic minorities and women." They shall have "full powers of organization and government, subject only to such legislative controls as may be necessary to ensure compliance with the terms of the endowments of the University and the security of its funds."

The president is executive head of the nine-campus University system. The Office of the President, located in Oakland, is the University's central administrative headquarters. There are five vice presidential divisions—Academic Affairs, Business and Finance, Agriculture and Natural Resources, University and External Relations, and Health Affairs. The Office of the President performs administrative functions for the University as a whole and supports all campus operations.

Each of the campuses 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. For the names of University regents, officers, and chancellors, see the Appendix.

The Academic Senate, consisting of faculty and certain administrative officers, determines the conditions for admission and degrees, subject to the approval of the regents; authorizes and supervises courses and curricula; and advises the University administration on the important matters of faculty appointments and promotions and budgets.

Students participate in policy-making at both the campus and Universitywide levels.

Colleges and Schools

The Berkeley campus is divided into 14 colleges and schools, most of which are subdivided into departments. Colleges accept students directly from high school or as transfers from other institutions and offer undergraduate instruction, normally as a four-year program, leading to the bachelor's degree. Schools usually begin instruction at the upper division level and provide students with preparatory training for specific professions.

Each of the colleges and schools has its own regulations for earning degrees and is headed by a dean who has final authority for all academic decision making. Students are encouraged to contact the deans for assistance with academic matters.

1952: Clark Kerr, professor of industrial relations, is named Berkeley's first chancellor, with responsibility for all but Universitywide policies. Kerr later becomes president of UC.

1961: The UC Regents name a fountain on Sproul Plaza after a German short-haired pointer named Ludwig von Schwonenberg, who had played in it daily.

A new student union opens, now called the Martin Luther King, Jr., Student Union.

1964: Students demonstrate against rules that prohibited certain political activities on campus, actions that later become known as the Free Speech Movement.

1969: A student strike in support of establishment of an independent Third World College and protests over use of a three-acre plot later called People's Park convey an image of Berkeley that is still strong in the public mind.

1987: Michele deCoteau, senior in engineering, is first Berkeley woman to be selected as a Rhodes Scholar.

1988: For the first time at Berkeley, and probably at any academically top-ranked U.S. university, no ethnic group forms a majority among the undergraduate student body.

(continued on next page)
The University Library

Berkeley's library system contains one of the best research collections in the country. The system consists of Doe Library, Moffitt Library, the Main Stacks (underground), the Bancroft Library which houses rare books and western Americana, and 18 branch libraries serving particular academic disciplines. The Teaching Library promotes information literacy and academic success by teaching students and faculty how to use a wide range of information resources—print, online, and networked—now available in the library. The library's collections and services are complemented by a variety of special purpose or "affiliated" libraries on campus. The holdings of the University library system include more than 8 million book volumes, 90,000 current serial publications, 5 million microform items, 400,000 maps, 60,000 sound recordings, 6,000 videos, and hundreds of thousands of government documents.

Most of the Berkeley humanities and social sciences materials are located in Moffitt Library and the Main Stacks. Moffitt Library, with its 160,000 volumes and 500 serial titles, is designed as a core collection and an entry point for new and undergraduate students. Special collections in Moffitt include reserve texts assigned in undergraduate courses and a file of course exams. Access is limited to card holders, including UC faculty, students, and staff.

The Media Resources Center on Moffitt's first floor provides spoken word and visual image material on a wide variety of subjects for student research and class reserves. The center also houses audio and video cassettes, slides, phonograph records, and the equipment to use these materials.

The Moffitt Microcomputer Center, also located in Moffitt Library, offers personal computing and consulting services to Berkeley students, faculty, and staff.

The Main Stacks, a four-story underground addition connecting Doe and Moffitt libraries, houses the humanities and social science research collection formerly located in Doe Library. The Main Stacks may be entered through either Doe or Moffitt Libraries. The Governmental/Social Science Information Service, located on the second floor of Doe Library, takes the place of the former Government Documents Department.

The Bancroft Library, devoted primarily to the documentation of western North America, maintains the largest collection of Mark Twain archives in the world. The East Asian Library contains rare editions of early manuscripts, scrolls, woodblock and engraved maps, stone rubbings, and bronze inscriptions. Special collections elsewhere in the library system include some of the rarest books and illuminated manuscripts in the world.

As a student you are entitled to use the libraries upon presentation of your current Berkeley student photo ID card. Borrowing privileges and access to the collections vary from unit to unit. Orientation tours are scheduled throughout the year, and library staff are available to help you at various information and reference desks. The library's services are described in the leaflets available at many central points and branch libraries.

For information about the campus libraries or help in using the online catalogs, ask at the Information Desk in Doe Library (643-9999). For tours, small group sessions on catalog use, and classes on a wide range of information resources, contact the Teaching Library in Moffitt (643-9959) or one of the subject-oriented branch libraries.

A cooperative program between the university libraries of Berkeley and Stanford provides convenient interlibrary services to faculty and graduate students. Together the two libraries have more than 13 million volumes, a combined research collection that is one of the richest in the world.

Affiliated Libraries

The library system also includes 15 affiliated libraries that contain specialized research collections of unique and often difficult-to-locate materials associated with organized research units, academic departments, and professional schools at Berkeley. These libraries primarily serve the teaching and research needs of faculty and staff, although many of them also serve the campus community at large and the general public.

Studying Abroad

Both undergraduate and graduate students may earn University credit while studying abroad at some 90 study centers around the world. See the studying abroad sections in the chapters on undergraduate education (page 45) and graduate education (page 66).

Lawrence Hall of Science

The Lawrence Hall of Science is both a public science center and a research unit in pre-college science and mathematics education. LHS programs are designed to involve participants actively in science and math explorations. Visitors participate in interactive planetarium shows, conduct do-it-yourself experiments and observations in the biology laboratory, and explore myriad other exhibits on everything from dinosaurs to lasers. LHS also offers public lectures; science and general interest videos; numerous special events; workshops for school groups and after-school classes in biology, chemistry, physics, astronomy, computers, robotics, and math; and summer science camps.

Science curricula developed at LHS are used throughout the world. Teacher-training workshops actively involve participants in curriculum development. LHS is open daily from 10 a.m. to 5 p.m. There is an admission fee. UC Berkeley students are admitted free
after 2 p.m. on weekdays. Transportation to and from LHS is available on a shuttle bus on weekdays, excluding UC holidays. For more information, call 642-5132 or send e-mail to lhsinfo@uclink.berkeley.edu. You can also visit LHS on the World Wide Web at http://www.lhs.berkeley.edu.

Phoebe Hearst Museum of Anthropology

Facilitating scholarly research and educating undergraduate and graduate students are among the primary functions of the Phoebe Hearst Museum. The museum also sponsors changing exhibits and programs in its exhibit hall to meet the varied educational and aesthetic interests of the University community and general public. There are more than four million objects in the museum’s holdings. Among these are major collections of ethnographic and archaeological objects from California and archaeological collections from ancient Peru and Egypt. The exhibit hall is open Wednesday through Sunday from 10 a.m. to 4:30 p.m. and until 9 p.m. on Thursday. Admission is free for museum members, UC students, staff, and faculty, and free to the public on Thursdays. The museum is closed on holidays and is wheelchair accessible. For further information, please call 642-3681 or 643-7648.

Berkeley Language Center (BLC)

Dedicated to the support of language instruction, the BLC offers a wide array of services, including a pedagogy library, numerous workshops each semester on the methodology of second language instruction, and the Language Media Center (LMC). The LMC provides an audiotape lending library, listening and viewing facilities, a language microcomputer laboratory/classroom, a multimedia development laboratory, an audio recording studio, a tape duplication service, video cameras, and projection equipment. The LMC houses an extensive collection of audiotapes, including language instruction in 100 languages and archival collections of linguistic field work and noteworthy University speeches and events. For further information call 642-0767, or visit our Web site at http://www.itp.berkeley.edu/blc/.

Summer Sessions

An extensive offering of regular academic courses and special programs is available through Summer Sessions. Students in good standing at any campus of the University or at another college or university are eligible for enrollment. Equally eligible are high school graduates, qualified adult applicants of sufficient maturity and aptitude for the work they plan to undertake, and, in certain cases, high school juniors and seniors.

Tuition varies with the number of units taken. Introductory and advanced courses for University credit are offered, and there are also special sessions for selected intensive language workshops. Courses are taught by both regular and visiting faculty. For more information, visit the Web site at http://www-summer.berkeley.edu.

Exchange and Cross-Registration Programs

Undergraduate students may participate in cross-registration programs with Mills College; Sonoma State University; San Francisco State University; California State University, Hayward; College of Holy Names; Dominican College; and JF Kennedy University. In addition, UC Berkeley students may attend a class each semester at any one of the campuses of the California state university or community college systems. Graduate students may participate in exchange programs with other University of California campuses, Stanford University, the Graduate Theological Union, and a number of colleges and universities that participate in the Exchange Scholar Program. See the exchange and cross-registration program sections in the chapters on undergraduate and graduate education.

University Extension

University Extension is the continuing education branch of the University, linking the campus and the community. It ranks among the top half-dozen university-level programs in the nation in size, scope, and the quality of instruction. Its courses—about 3,000 are offered each year—provide the adult population of the Bay Area with opportunities to pursue intellectual and cultural interests, keep abreast of current research, prepare for career advancement, and examine critical issues in society.
University Research Expeditions Program

Program Office: 2223 Fulton Street, Fourth Floor, 642-6586

The University Research Expeditions Program (UREP) allows students, staff, and members of the general public to join domestic and foreign field research projects sponsored by the University. Participants help with projects such as wildlife habitat studies, botanical collecting expeditions, ethnographic field work, ecological surveys, fossil excavations, historical studies, and the like.

Some of the projects planned for 1997, each approximately two to three weeks in duration, allow you to:

- Excavate medieval churches in Ireland; Mesolithic sites in Germany; ancient village settlements of Lake Titicaca; prehistoric sites in the Owens Valley, California; Maya sites in the Yucatan; a Mochica Ceremonial site in coastal Peru; and preserve rock art in Hawaii.
- Study ceremonial arts in Thailand.
- Work to preserve ecosystems in Costa Rica, Belize, Northern California, Ecuador, and Brazil.
- Track pelicans in Baja, California, manatees in Costa Rica, or amphibians in Yosemite.
- Study the impact of farming on Kenyan wildlife.
- Conduct geological surveys in Highland Peru or Teton Range, Wyoming.

For further information, write UREP at the University or call 642-6586.

UREP volunteers work on an archaeology project on the Cape Verde Islands.

Most of the University’s fields of study are represented in courses ranging from evening classes to one-day seminars and weekend conferences. Instructors are drawn from the campus, the business world, the arts and sciences, and the professions. Most Extension students have bachelor’s degrees and many have advanced degrees.

Extension offers 33 multi-course certificates in such fields as interior design, marketing, hazardous materials management, computers and information systems, telecommunications, and landscape architecture. Certificate programs are designed for persons who want to acquire a thorough background in a given field but do not want to undertake a degree program.

Extension’s four-month diploma programs offer concentrations in business, computers, and engineering. These programs bring students together from around the world and are increasingly popular with graduating seniors seeking an early advantage in their careers. English-language programs, designed for non-native speakers who want to improve their command of English, offer full-time or part-time study.

The Fall Program for Freshmen, designed in cooperation with the College of Letters and Science and the College of Engineering, provides a liberal arts curricu-

lum each fall for 500 freshmen admitted for the ensuing spring semester. The program enables these new students to complete the full academic year of study.

Extension courses are held throughout the Bay Area, with concentrations in Berkeley, San Francisco, Menlo Park, Oakland, Fremont, and San Ramon. In other cities both nationally and globally, short courses draw a diverse professional audience. The Oxford-Berkeley Program heads a roster of travel-study courses bringing American adults to cultural centers for on-site study. Extension also offers on-site contract training through the Berkeley Partnership for Professional Development.

Many Berkeley campus courses in regular session may be open to nondegree students through an Extension enrollment option called concurrent enrollment. The consent of the instructor and the department chair (and in some cases the dean of the school or college) are required, and enrollment must be for credit. Obtain full details and an application form from Extension’s registrar.

For more information, call 642-4111, visit the Web site at http://www.unex.berkeley.edu:4243, or write to University of California Extension, 1995 University Avenue #7000, Berkeley, CA 94720-7000.
The University of California, Berkeley Art Museum, and Pacific Film Archive (BAM/PFA)

The University of California, Berkeley Art Museum, located at 2626 Bancroft Way (near College Avenue), is the major visual arts museum serving the University community. Facilities include galleries, a fine arts bookstore, a sculpture garden, a cafe, and a film theater and film library. Gallery hours are 11 a.m. to 5 p.m. Wednesday through Sunday and 11 a.m. to 9 p.m. Thursday. Admission to gallery exhibitions is free for Berkeley students. For a taped message about exhibits, call 642-0808; for a taped message about the Pacific Film Archive program, call 642-1124. To reach Pacific Film Archive offices and library, call 642-1437, Monday through Friday, 9 a.m. to 5 p.m.

The museum annually offers about 15 exhibitions; some are nationally circulating and others originate at the museum. A permanent collection of Western and Asian art is on display on a rotating basis. The MATRIX program is a changing exhibition of contemporary art.

Special study collections are available to students and faculty, works in storage are made available for study upon request, and various exhibitions are prepared for and by University classes and seminars. In addition, the museum has an internship program in which advanced students receive practical experience by assisting in museum work. Lectures on art by artists and art historians are regularly held.

The museum’s film department, the Pacific Film Archive (PFA), is one of the major film exhibition centers in the country, offering programs of international cinema to the public each evening. PFA maintains a study collection of 7,000 prints and 4,000 books and provides a media information service and facilities for both film study and research screenings. Monthly film programs are scheduled for preschool through high school classes as well.

Music, Dance, Drama

The University offers a broad variety of activities in the arts and humanities. These include:

Music—Students may enroll in a variety of student performing groups for credit through the Department of Music, 104 Morrison Hall (642-2678); auditors are also welcome in most groups. The African Music Ensemble, Chamber Chorus, Chamber Music Ensemble, Colle- gium Musicum, Javanese Gamelan, University Chorus, and University Symphony Orchestra are included; many of these groups give concerts every semester. The Department of Music also presents free noon concerts on Wednesdays in Hertz Hall. Extracurricular musical groups are the UC Jazz Ensemble (642-5062), the Cal Marching Band (642-6704), and Student Musical Activities—Vocal (642-3880).

Theater and Dance—The Department of Dramatic Art/Center for Theater Arts offers many opportunities for students interested in theater and dance. Credit is offered for all aspects of participation in a variety of productions in the Zellerbach Playhouse, Durham Studio Theater, and 7 Zellerbach Hall: acting, dancing, directing, designing, stagecraft, and choreography. For information, please call 642-1677.

The Student Union Program, Entertainment, and Recreation Board (SUPERB) is a student-run entertainment production company that produces a wide range of events, including the Berkeley Film Series in Wheeler Auditorium, concerts in The Bear’s Lair and on Lower Sproul Plaza, free sneak previews, special events, and more. All students are welcome to get behind the scenes of SUPERB events. SUPERB is a part of the ASUC (Associated Students of the University of California). For more information, contact SUPERB at 10 Eshleman Hall, 642-7477.

Cal Performances—a year-round program of world-class, professional music, dance, and drama presentations. Registered Berkeley students receive a half-price discount and $5 student rush tickets, as available. Berkeley faculty and staff receive a $2 discount. For information or reservations, call 642-9988.

Physical Education, Sports, and Recreation

Each year more than half the Berkeley student body regularly uses the campus physical education, sports, and recreation facilities. The campus has four gymnasiums; four swimming facilities; three weight rooms; squash, handball, racquetball, and tennis courts; a martial arts room; and two 440-yard tracks. Registered students can use these facilities free of charge during the academic year.

The Department of Human Biodynamics offers physical education classes to students in aquatics, sports, dance, combatives, and exercise. Instruction is directed toward improving performance skills, learning about personal wellness and fitness, and developing and maintaining physical fitness. Elementary and intermediate classes are provided in many activities. Advanced classes are also offered in certain areas. All classes offered by the Department of Human Biodynamics are for credit and are open to all students. (See the Schedule of Classes for specific classes each semester.) For further information, consult the departmental office at 200 Hearst Gymnasium.

The Department of Intercollegiate Athletics and Recreational Sports offers a wide range of leisure and competitive activities. The CalFIT (Fitness, Instruction, and Training) program allows members of the campus community to participate in a wide variety of noncredit activities from jazz dancing to massage, yoga, and strength training. The Optimal Health Center offers massage therapy and nutritional counseling appointments. CalSTAR (Sports, Training, and Recreation) assists disabled users who are interested in recreational programs. We offer volunteer assistants as well as
Universities love competition, and not simply in sports. The real heart of the competition lies in academic things—libraries, laboratories, impressive buildings, distinction of faculty....I remember a Big Game not long after the war, Stanford was beating Cal decisively at Berkeley and the Cardinal rooting section was pouring it on. A man just behind me got up and shook his fist at the Stanford section, shouting, “We got the Mark Twain Papers,” an event that had happened only a week before.

—Robert Nisbet
Teachers and Scholars: A Memoir of Berkeley in Depression and War, 1992

Computing on Campus
The Berkeley campus provides access to a full range of distributed computing capabilities, from individual workstations to large shared computers. Supported computers include Apple Macintoshes, PCs, UNIX workstations, and central UNIX servers.

Most of the campus’s computers and workstations are connected to the Internet, which also provides access to the MELVYL and GLADIS online library systems, the UC Berkeley World Wide Web server at http://www.berkeley.edu/, and other online information resources.

The UCLink service provides campuswide access to electronic mail; see the Web site at http://www-uclink.berkeley.edu/. For information on how to access UCLink and other general-purpose computers, contact User & Account Services, 642-7355, accounts@gnet.berkeley.edu.

The interactive computer-based Tele-BEARS system allows students to register for classes using a touchtone telephone or the World Wide Web. The companion Info-BEARS system provides access to registration and class information.

Computing facilities provide access to Macintoshes, PCs, UNIX workstations, terminals, and printers. Facilities at 349 Davis Hall, 2103 Valley Life Sciences Building, 1535 Tolman Hall, B-21 Dwinelle Hall, B-3 Evans Hall (Calculus Lab), and 212 Wheeler Hall are primarily for use by scheduled classes. Others at 2105 Valley Life Sciences Building, 310 Davis Hall, B-3 Dwinelle Hall, 352 Moffitt Library, 211 and 212A Wheeler Hall, and B-3 Evans Hall are available for drop-in use when they are not being used for instruction. Call 643-6253 for recorded information or see the Web site at http://www.berkeley.edu/facility/.
Instructional and Collections Computing Facility (ICCF), 2224 Piedmont Avenue, has UNIX workstations and PC compatibles. ICCF users must open accounts. Call 642-7901 for information. Additional facilities and services for the social sciences are available from the Computer-assisted Survey Methods (CSM) Program. Call 642-6592.

Among academic units, Electrical Engineering and Computer Sciences, Business Administration, Chemistry, Physics, Engineering, and many other departments have extensive computing facilities. Most departments have faculty computing coordinators who can advise on departmental computing resources.

The Scholar’s Workstation, the campus’s computer store, offers selected workstations, software, and peripherals at educational discounts to full-time faculty, staff, and students. Workstation Hardware Support provides repair service for equipment sold by The Scholar’s Workstation.

Services for the campus community include drop-in consulting for faculty and staff in 264 Evans Hall (also available by e-mail and telephone; see sidebar), drop-in consulting for students in the Golden Bear Center atrium, noncredit short courses and training (call User & Account Services for information), and a free newsletter covering developments in computing and communications at Berkeley. More information can be found on the IST Web site at http://www.berkeley.edu/ist/.

Botanical Garden

The Botanical Garden was established in 1890 and transferred to its current location on 34 acres on Centennial Drive in Strawberry Canyon in the 1920s. Although relatively small in area, the garden ranks with the world’s leading gardens in the variety and quality of its plants. There are 13,000 different species, and something is in bloom every month of the year.

One major collection is cacti and another is succulent plants. Native plants of California occupy the largest area devoted to a regional collection. Special collections include herbs and spices, palms, rhododendrons, Mesoamerican plants, ferns, cacti, carnivorous plants, orchids, a garden of Chinese traditional medicinal plants, and economically important species.

The Botanical Garden offers free tours to the public every Saturday and Sunday at 1:30 p.m. Special group tours may be arranged for a nominal charge by calling 642-3343. The garden has three large public plant sales annually, as well as plants for sale routinely at the Visitor Center. The garden is open to the public daily except Christmas from 9 a.m. to 4:45 p.m. The Visitor Center/Gift Shop is also open daily. Admission fees: Adults $3; children 1-18 $1; UC students free. Annual passes are available. A shuttle bus provides transportation to and from the garden, and parking (for a fee) is available at the garden. For shuttle information, call 642-5145.
The California Alumni Association

All former students and friends of the University of California, Berkeley are invited to join the California Alumni Association. Founded in 1872 and currently 85,000 members strong, the association is one of the best ways to stay in touch with Berkeley and promote the welfare of the University and its student body.

The association administers the Alumni Scholarship Program, which annually awards more than $700,000 to some 800 undergraduates. These funds come through fundraising from alumni and alumni clubs, and from the interest on named endowments.

It sponsors the Alumni Scholars Club, a social and service organization, and co-sponsors career programs. The association also maintains the Alumni Career Resources file, a compilation of Cal graduates whom students may contact to learn more about careers.

It sponsors Cal in the Capital and Cal in Sacramento, summer internship programs for students in the national and state capitals, and sponsors four Class Councils, which provide activities for students within the same class year while on campus. It also offers a program called Cal Jobs for Cal Students, through which alumni provide students with internships in the community. Each summer, the association hires 90 students to work at its mountain family camp, the Lair of the Golden Bear, near the Sierra community of Pinecrest.

Alumni are actively involved in helping the University's outreach efforts to bring the finest high school students to Berkeley, and every year they host receptions honoring newly admitted students. Outstanding students from underrepresented minorities are attracted to Berkeley through the association's Student Outreach Program. The association also provides one-to-one support for students from diverse cultures and backgrounds through its Mentorship Programs. Its volunteer service program, Cal in the Community, coordinates the activities of alumni and students in service projects throughout the nation.

Among the many benefits association members enjoy are the nationally respected magazine California Monthly: free UC library privileges on UC campuses; access to the Lair of the Golden Bear family camp; year-round alumni group travel programs; major medical and life insurance plans; access to career networking programs with alumni professionals; discounts on UC Berkeley Extension courses; access to University ProNet, a résumé database service; and discounts on use of campus sports facilities.

The association is a central source of information on more than 115 affiliated alumni clubs located around the world and organized by special interests as well as geography.

Each year, the association recognizes distinguished alumni and student achievement; honors outstanding service to the University and the community; and co-sponsors the Distinguished Teaching Awards for faculty. It presents or co-sponsors a variety of events, including the Charter Banquet, the Senior Commencement Convocation, Cal Alumni Day in Southern California, and Cal Day, an annual open house at Berkeley.

The association maintains an office in Los Angeles to assist alumni and students in Southern California. Telephone: (213) 624-5060.

Information about all association activities, including young alumni and club programs and alumni events, is available at the association's campus headquarters, Alumni House, where students and alumni are always welcome. Alumni House is a multipurpose facility. Some of its rooms may be rented for meetings and events by association members, campus departments, and student groups registered with the ASUC and the Student Activities Office.

To inquire about the California Alumni Association, call 642-7020 or toll-free (888) 225-2586, send a fax to 642-6252, or visit the association's Web site at http://www.alumni.berkeley.edu.

Visitor Services

Visitor Services, located at 101 University Hall, 2200 University Avenue, provides information about the campus, transportation, entertainment, student services, campus events, and information on registration procedures, as well as student and campus directory assistance. Call 642-INFO or 642-5215 with your questions.

Campus Tours

Visitor Services is the starting point for campus tours Monday through Friday at 10 a.m. Saturday tours begin at 10 a.m. at the southeast corner of the Martin Luther King, Jr., Student Union, located just off Bancroft Way at Telegraph Avenue. There is no charge for these 1½-hour walking tours. During the semester, tours of a residence hall are also available Monday through Friday following the regular tour.

Special group tours may be arranged by calling 642-5216. There is a small charge for groups not related to schools. Please allow two weeks' notice to make reservations for a special tour.
School spirit is never more evident than when the Cal Marching Band goes by. Its 170 high-stepping musicians play for home football games and special events.
Student Life

This section offers general information about student life on the Berkeley campus and brief summaries of some of the services and organizations available, arranged in alphabetical order. You may obtain more information from the appropriate office or from Resource, the student handbook.

Academic Partnerships for Excellence (APEX)

Academic Partnerships for Excellence (APEX) is an array of five academic and personal support services offering tutoring, advising, advocacy, and support to students at UC Berkeley. Located in the Golden Bear Center on lower Sproul Plaza, these services are aimed at enhancing the academic development of students by providing the support and assistance necessary to help students achieve academic success. The services within APEX are:

- The Student Learning Center
- The Re-entry Students’ Program
- Student Life Advising Services
- Academic Services for Student Athletes
- Disabled Students’ Program

These units are discussed in alphabetical order on the following pages.

Academic Services for Student Athletes

Academic Services for Student Athletes, located in 128 Golden Bear Center, offers academic support and advising for Berkeley’s student athletes. Services are geared to ensuring academic achievement through tutoring, study tables, computer labs, and staff advisers. For more information, call 642-8402.

The ASUC

The Associated Students of the University of California (ASUC) is the official organization of Berkeley students. Membership in the ASUC is voluntary, although all students must pay the ASUC fees. This non-profit organization, through its student-elected senate, is responsible for directing a large variety of student activities and serves as the official student spokesperson in University affairs. Graduate students also elect departmental representatives to the Graduate Assembly, which meets regularly in Anthony Hall. The ASUC also provides a wide range of programs and activities. Each year, roughly $600,000 is distributed to student activity groups, including associations, ethnic and cultural groups, and sports. The ASUC, moreover, sponsors vital programs such as student advocacy (642-6912), the Student Legal Clinic (642-9984), the Renters’ Assistance Project (642-1755), and the Student Union Program, Entertainment, and Recreation Board (SUPERB) (642-7477).

The basic goals of the ASUC are to enhance the quality of life for both students and the community, as well as to increase the avenues for student participation in education and campus operations. Other important goals of the ASUC are to protect full freedom of assembly and expression in the University community and to facilitate academic and social responsibility.

Career Planning and Graduate School Advising

Career and Graduate School Services

Career and Graduate School Services (CGSS), 2111 Bancroft Way, assists students and alumni with the career planning and graduate school admission processes. Students interested in advanced study in business, health science, law, or many other graduate or professional fields may obtain comprehensive advising in these areas and assistance with applications and letters of recommendation. Advisers also assist students and alumni in defining career objectives and developing job search skills to find employment consistent with their career goals.

In addition to advising services, CGSS offers a series of workshops and special programs on a variety of topics. The Resource Center houses reference materials, including occupational information, directories of employers and graduate schools, employer literature and college/university catalogs, informational handouts, and graduate admission test materials. CGSS provides an extensive on-campus interview program and year-round listings for full-time, part-time, summer, internship, and casual employment opportunities. For more information, call 642-1716 (TDD, 642-0592) or visit our Web site at http://uga.berkeley.edu/cgss. See page 46 for more information on cooperative education and other internships.
Child Care

The Child Care Program is available to full-time registered Berkeley students and provides care for children aged three months to eight years as of the first day of fall classes in a given academic year. To be eligible, at least one parent must be a registered Berkeley student; the other parent, if not a Berkeley student, must be employed or attending a degree-granting institution. Priority is given to currently enrolled children; next, to families based on gross income (lower income admitted before higher income). Each family is asked to contribute two hours of parent participation per week. There are four centers, each open from 8 a.m. to 5 p.m. Fees are based on a sliding scale depending on gross monthly income and family size. For information and an application (the fall deadline is June 1), contact the Child Care Services office, 2537 Haste Street #4840, Berkeley, CA 94720-4840, 642-1827.

Clubs

Special Interest Clubs

Besides regular ASUC-sponsored activities, there are more than 350 registered student organizations on campus serving special interests and needs. Student groups include academic and professional, ethnic and cultural, political and social action, recreational, religious, and service-oriented organizations, as well as student publications. On Thursday of the third week of instruction during the fall semester, an activities fair is held in Sproul Plaza to acquaint you with many of the organizations and to give you an opportunity to join. A list of registered student groups is available from Student Activities and Services (SAS) in 102 Sproul Hall (642-5171) or on the Undergraduate Affairs gopher server.

Fraternities and Sororities

Fraternities and sororities offer students an opportunity to make life-long friendships, participate in community service, develop leadership skills and much more. Contact the Interfraternity Council for men (643-6919), the College Panhellenic Association for women (643-6916), or the predominantly African American National Pan Hellenic Council (642-7950). All three groups are located in 102 Sproul Hall. Additional information is available from Student Activities and Services (642-7507) in 102 Sproul Hall.

Honor Groups

Honorary academic societies are open to students of outstanding accomplishment. These multidiscipline honor societies include Honor Students' Society, Phi Beta Kappa, Prytanean, Mortar Board, Golden Key, Order of Omega (a Greek honor society), Tau Beta Pi (a national society of upper division students in the College of Engineering and in chemical engineering), and various other groups in other disciplines. Most of these groups offer tutoring services. Information on the general groups is available in SAS, 102 Sproul Hall. Contact specific departments for the single-discipline honor societies.

Student Publications

Student publications provide opportunities for involvement in all phases of publishing: writing, editing, reporting, art and design, advertising, sales, and general management. If interested, you should inquire at the ASUC Library in Heller Lounge in the ASUC (642-2892). Grants are available through the Committee on Student Publications and other sources in 102 Sproul Hall.

The Berkeley Undergraduate Journal publishes outstanding essays from any academic discipline. If you have written a paper 15-60 pages long that would appeal to an educated audience, watch The Daily Cal for submission deadlines (usually the third week of each semester). Undergraduate students may also apply for positions on the 10-member Editorial Board. For further information, call the Undergraduate Programs office (642-8378) or send e-mail to alix@uclink4.berkeley.edu.

Berkeley Scientific is a faculty-reviewed, student-published science journal that is issued twice a year. Undergraduate papers from all scientific disciplines are welcome. For more information, call 642-3795, or send e-mail to scientific@LS.berkeley.edu.
Fun Things to Do

ASUC Art Studio
Classes in photography, video, digital imaging, bookbinding, drawing, painting, ceramics, printmaking; lower level, MLK Jr., Student Union, 642-3065

Athletics
Recreational Sports Facility (RSF), 2301 Bancroft Way
CalSTAR (recreation for disabled people), RSF, 643-8031
Court Reservations (tennis, squash, racquetball, handball), RSF Guest Services Desk, 642-8345
Department of Recreational Sports, RSF, 642-8342
Hearst Gym, 642-2427
Intramural Sports, RSF, 643-6822
Sports Clubs, RSF, 643-8024
Tickets, Athletic Ticket Office, 642-3277 or 1-800-GO-BEARS
Cal Performances
101 Zellerbach Hall
Box Office, Zellerbach Hall, 642-9988
General Information, 642-0212
Student Committee for the Arts, 101 Zellerbach Hall, 643-6712
Ushering, 101 Zellerbach Hall, 643-6710
(continued on next page)

Office of Student Affairs
The Office of Student Affairs within the ASUC offers fiscal advice and program assistance to more than 150 ASUC-funded student groups. For information call 642-4536.

Community Service Programs
As part of its overall mission to prepare students for good citizenship, Berkeley is committed to promoting the ethic of public service and encouraging students to participate in community service activities. These activities benefit the disadvantaged and address needs such as educating the illiterate, consoling the lonely and sick, serving the elderly, and preserving the environment.

Cal Corps Public Service Center
Cal Corps Public Service Center, a component of Student Activities and Services, is the campus base and informational clearinghouse for community service efforts. Programs available to the campus community through the center include the Volunteer Clearinghouse, Student-Initiated Community Service Projects, Service-Learning Classes, President Clinton's National Service Program, and much more. For more information on public service or any of Cal Corps' programs, please stop by our office at 505 Eshleman Hall or call 642-3916.

The Volunteer Clearinghouse is a computerized database listing volunteer placements at over 200 community-based organizations in the Bay Area, such as Habitat for Humanity, Berkeley Unified School District, San Francisco District Attorney's Office, and Project Open Hand. In addition, a new section details full-time volunteer opportunities, including the Peace Corps, City Year, and Public Allies, which students can undertake during a year off or after graduation. For students or groups that are unable to volunteer on a weekly basis, Cal Corps compiles a monthly listing of short-term service projects.

The Student Community Service Grants Program was created by concerned students to address the needs of the surrounding community. To support this effort, Cal Corps offer grants, advising, and leadership development for students initiating and operating their own community service projects. Approximately 25 groups, ranging from tutorial and mentorship programs to health and legal services, are funded each year. For a complete listing of projects, or for information on the grant application process, contact the Cal Corps office.

Service-Learning Classes: Cal Corps sponsors a number of service-learning classes that integrate community service into the academic curriculum. Students may receive 2-3 passed/not passed units for volunteering at a local agency and attending a seminar related to their service placements. Issues addressed include home-
services the Graduate Assembly offers include direct funding for graduate student groups and activities, an annual new graduate student orientation, graduate student instructor training programs, and a bimonthly magazine called The Berkeley Graduate. The GA also coordinates campuswide and systemwide graduate student advocacy plans. A patio and meeting room are available on a reservation-only basis for graduate student groups and organizations. Staff assistance is available for a variety of information and referral services.

Health and Counseling Services

The University Health Services (UHS) provides comprehensive medical, counseling, and prevention services to Berkeley students and selected faculty and staff. The UHS is located in the Tang Center at 2222 Bancroft Way. Services are generally available from 8 a.m. to 5 p.m. Monday through Friday. Selected services, including urgent care, are available after 5 p.m. and on Saturdays. Services and hours are reduced during the summer.

You can call the 24-hour Advice Line at 643-7197. A nurse will discuss symptoms and provide advice on emergencies, self-care, and when to see a clinician.

Most student visits to the Tang Center are supported by registration fees. There are, however, additional fees for selected services. Call the UHS Cashier’s Office, 642-8448, with any questions.

Medical and Insurance Services

All students can use on-campus services. These include visits with the physician/nurse practitioner of your choice, visits to specialists in any of nine medical disciplines, walk-in urgent care, appointments with a nutritionist or health educator, laboratory tests and X-ray procedures, pharmacy, allergy tests and shots, and international travel care. Call 642-2000.

Disabled Students’ Program

The Disabled Students’ Program (DSP) is located at 230 Golden Bear Center, 642-0518; TTY/TDD, 642-6376. If you have a permanent disability, chronic illness, or temporary injury, you can receive academic support services (such as readers, notetakers, sign language interpreters), attendant referral, emergency transportation, assistive technology, and housing assistance. A residence program for newly admitted severely disabled students needing attendant care is available. Many other services are available and most are free. If you have a visual, hearing, mobility, or orthopedic disability, or a learning or other non-apparent disability, you should contact DSP for complete information about services.

Graduate Assembly

The Graduate Assembly, whose offices are located in Anthony Hall (Pelican Building), 642-2175, is the graduate component of Berkeley’s student government, the ASUC. The Graduate Assembly represents and serves the interests of graduate students. If you are a graduate student, you are welcome to participate in the various projects and activities of the Graduate Assembly, but formal representation is assigned through departments.
All Berkeley students must carry major medical health insurance while attending Berkeley. You are automatically enrolled in the University’s Student Health Insurance Plan (SHIP) and are charged a health insurance fee as part of registration. This insurance supplements the campus services available at the UHS.

If you are covered by other health insurance, you may waive the SHIP requirement if you can show that your coverage is comparable to that available under the University plan. Please note that even if you waive out of SHIP, you are still eligible like all other students for on-campus health care at UHS.

A major medical health insurance plan is also available for purchase to spouses, domestic partners, and dependents of students. Dental insurance is available to students. For student insurance information, call 642-5700.

**Counseling and Psychological Services**

Counseling is available for career, academic, and personal concerns; call 642-9494. The counselors are a multicultural group of social workers, psychologists, and psychiatrists. Any Berkeley student can come in to talk about choosing a major, learning about interests and abilities, clarifying career goals and exploring options, coping with personal crises, dealing with concerns about relations with family or others, overcoming learning and concentration problems, life at Berkeley, or any other concerns.

Psychological, career, and aptitude testing and group and couples counseling are available as part of the counseling process. Social services (642-6074) are also offered to assist students with concerns such as pregnancy, alcohol and other drug use, chronic or life-threatening diseases, traumatic accidents, and sexual assault.

The Tang Center also houses the Career and Educational Guidance Library (642-2367), which has materials on occupations, professions, and educational and career opportunities, and the Self-Care Resource Center, which has interactive programs, books, audio and video tapes, magazines, and self-assessment tools.

**Health Promotion**

Workshops and speakers are available on a variety of topics including HIV/AIDS, stress, cultural health issues, alcohol and other drugs, sexually transmitted diseases, sexual assault, and community health. Trained student health educators offer workshops and individual consultations and organize groups of students to work on critical campus health issues. Peer educators earn 4 credits per year through the School of Public Health.

**University Optometric Eye Center**

The School of Optometry, located in Minor Hall, is one of the leading research facilities in the world for studying the eye, vision, and related disorders. As part of its academic programs, the school has an excellent Optometry Clinic that offers comprehensive eye care to faculty, staff, students, and the general public.

The clinic provides complete eye examinations, including eye health assessments and treatment. Prescriptions for glasses or contact lenses can be filled from an extensive selection of eyewear. In addition to providing primary vision care, specialized care is also available: ocular health, eye photography, binocular and infant vision, low-vision rehabilitation, and electro-diagnostic testing; vision training for reading or sports; video display terminal (VDT) examinations; special visual assessments for the disabled; and job-related vision examinations and safety glasses.

The school also operates an eye clinic open to the general public in the University Health Service center at 2222 Bancroft Way. Insurance (including SHIP and UC employee benefit coverages) is accepted.

For more information about the clinic in Minor Hall, call 642-2020; for more information about the clinic in the University Health Service center, call 643-2020.

**Housing**

Admission to Berkeley does not guarantee housing reservations. You should acquaint yourself well before your enrollment with the various living arrangements possible. Undergraduates will receive housing information and an application to the residence halls in their admission packets. Graduate students should write directly to Housing Services, 2401 Bowditch Street #2272, Berkeley, CA 94720-2272, or telephone 642-3642, to receive descriptive material.

More than 9,000 men and women live in University residence halls, fraternities, sororities, International House, cooperatives, and University Family Student Housing. Early application to living groups is recommended. The remaining students live in rooms and apartments in the community.
University Residence Halls
University-operated residence halls accommodate some 5,000 students, approximately 70 percent of whom are new, incoming students. All new, incoming fall freshmen and transfer students who apply by the deadline are guaranteed housing in the residence halls, if we are able to accommodate their preferences. Each residence hall is unique, and to become acquainted with the options, new students are encouraged to read their housing information thoroughly. If possible, they should also take the tour offered by the campus Visitor Information Center. Most halls are co-ed, and most offer a dining facility, recreational and social programs, and study rooms. University housing includes "theme programs" which provide a living environment focused on a language or culture. Most residence halls are within a few blocks of campus.

Community Living
The Community Living Office offers rental listings and counseling for students who are looking for housing in the community. For more information, write to the Community Living Office, 2401 Bowditch Street #2272, Berkeley, CA 94720-2272, or call 642-3642, or send e-mail to homeinfo@uclink.berkeley.edu.

Co-ops
The University Students' Cooperative Association (USCA) is a nonprofit, student-owned and operated organization that is independent of the University. The Co-op houses approximately 1,200 students in 18 two- and three-story houses and apartments. Members must work five hours a week at a variety of duties. Contracts may be cancelled at the end of each semester. You may also join a program which allows you board although you do not room there. Admission priority is given to EOP/AA and disabled students. For more information, contact USCA, 2424 Ridge Road, 848-1936.

Family Student Housing
The University operates 994 apartments for married students and single-parent families. The apartments are located at the University Village in Albany, approximately four miles northwest of the campus, and at the Smyth-Fernwald complex in Berkeley. You may apply for family student housing before you have been admitted to the University. You should apply early, as assignments are made on a first-come, first-served basis, and the waiting period could be as long as a year. For more information, contact the Family Housing Assignments Manager, 2401 Bowditch Street #2272, Berkeley, CA 94720-2272, or call 642-4109, or send e-mail to apts@uclink.berkeley.edu.

Law and Graduate Student Apartments
Manville Apartments is a complex of 132 small, unfurnished, single-occupancy studio apartments reserved exclusively for law and graduate students. It is located at 2100 Channing Way and offers many amenities: recreation room, laundry, mail room, storage space, cable TV, and in-room campus network and Internet hookups. For additional information, contact Apartment Assignments, 2401 Bowditch Street #2272, Berkeley, CA 94720-2272, or call 642-4109, or send e-mail to apts@uclink.berkeley.edu.

International House
International House is a coeducational residence for about 600 students and scholars from the U.S. and abroad, primarily at the graduate level. It is also an intercultural program center for the campus, serving nonresident and resident members. An active schedule of cultural, social, and recreational events is offered, designed to promote understanding and friendship among all nationalities. For an application and further information, write or call the Residence Office, International House, University of California, Berkeley, 2299 Piedmont Avenue #2320, Berkeley, CA 94720-2320. Telephone: 642-9470; fax: 642-5220. For nonresident membership, call the Program Office, 642-9460.

Information Online
A rich array of campus information is available online, and you can access it from the World Wide Web or, in some cases, via telnet or direct dialup. Most campus Web servers can be discovered by accessing the Berkeley home page with appropriate client software at http://www.berkeley.edu. This links you to other campus servers that offer textual material, maps, forms, periodicals, and other kinds of information covering quite a range of general campus information, such as directories and event calendars.

Some online services of particular interest to students include the following:
- Information about student admission, requirements, course registration, schedule of classes, campus catalog, and other material crucial to students and prospective students.
- Information about campus services fundamental to student life, such as health services, housing, athletics, student jobs, and student organizations.
- Resources that can help you with your academic work. In particular, two online systems offer access to campus and systemwide bibliographic catalogs: the campus GLADIS system, which includes circulation information from campus libraries, and the UC systemwide MELVYL system, which includes a large collection of scholarly materials for use by the UC community. These are accessible via telnet at the addresses gladis.berkeley.edu and melyvyl.berkeley.edu, respectively.
- The campus library also maintains a Web site where you will find a growing selection of online journals and other discipline-related resources, as well as guides to the library and general interest material.
These and other servers are accessible over the campus network from networked computers and workstations, campus computer facilities, and libraries. Some textual material can be accessed with no special client software if you telnet directly to the address infocal.berkeley.edu.

International Student Advising

Services for International Students and Scholars offers a wide range of services to international students, international scholars, and their families. Services include an international student orientation program, guidance on visa matters, help in solving financial problems, advice and referrals about personal concerns, and information on almost any topic of special interest to international students and scholars. Located in International House, 2299 Piedmont Avenue, 642-2818, the office is open Monday through Friday, 9 a.m. to noon and 1 to 4 p.m. E-mail: siss@uclink.berkeley.edu

The International House Program Office, 642-9460, organizes cultural, social, and recreational programs that enhance the appreciation of various cultures. Programs offer opportunities for personal interaction and participation in campus and community events. Trips to neighboring communities for home stays and tours of local institutions and facilities enable international visitors and U.S. citizens to learn from each other; at the same time these activities introduce people from abroad to unique aspects of U.S. society. I House cultural events, parties, and slide shows enrich the extracurricular life of the campus.

Nonresident membership in the I House (for a nominal fee) keeps newcomers informed of activities for the international community.

Legal Services

If you are concerned about a legal problem or want information about your legal rights and obligations and you are a registered Berkeley student, you are encouraged to make an appointment with Beth Karren, the Student Legal Services' attorney, by calling 642-4980. For appointments only, please call 642-5171. Ms. Karren's office is located in Student Activities and Services, 102 Sproul Hall, and her hours are 9 a.m. to 4 p.m. Monday through Wednesday during the academic year and 9 a.m. to 4 p.m. Tuesday during the summer.

Office of the Ombudsperson for Students

The ombudsperson serves all students, both undergraduate and graduate, who feel they have been treated unfairly or need help in resolving a problem. Having no official administrative role in imposing solutions, the ombudsperson acts as an independent "agent of justice" who, if the situation warrants it, investigates complaints and the conditions leading up to the complaints and attempts to work with all parties involved to mediate a satisfactory solution. All matters referred to the ombudsperson are held in the strictest confidence.

If you are confronted with a bureaucratic impasse or feel you have been treated unfairly or need help with a procedural or academic problem, contact the ombudsperson. To make an appointment, call 642-5754.

Orientations for New Students

The Office of New Student Services offers programs, services, and publications to introduce new undergraduates to the Berkeley campus. All incoming freshmen and transfers will be sent information about the Cal Student Orientation (CalSO) Program. At CalSO, new students (and their parents) receive information, advice, and the student handbook Resource to ease their transition to life at Berkeley. New Student Services also organizes Welcome Week in the fall, staffs the chancellor's Smooth Transition Information Tent, and runs the CalSO Resource Center in the Martin Luther King, Jr., Student Union, where students can get help with class enrollment during the early weeks of each semester. The Office of New Student Services is located at 137 Golden Bear Center, 642-4970.

Smooth Transition

The fall "Smooth Transition" program builds upon Welcome Week activities and includes nearly a month of welcoming and orientation activities sponsored by academic departments, student service units, and student groups. Spring Smooth Transition includes orientations and an afternoon reception with the chancellor. The program funds these activities as well as additional staff to work the lines at Financial Aid disbursement, at the Cashier's Office, and at other busy campus locations, thereby helping students to better navigate and conquer the bureaucracy.

Re-entry Students Program

The Re-entry Students Program offers services and programs designed to promote adult learning for undergraduate and graduate re-entry students. A component of Academic Partnerships for Excellence (APEX), the program is designed to encourage peer collaboration and build community. The program co-sponsors two academic courses, Education 98 and 198, with the School of Education. Each is offered for 1-3 units of passed/not passed credit. The following topics are covered: Increasing Academic Performance: Easing the Transition to Cal; Negotiating the Bureaucracy: A Guide to Campus Services; Graduating and Moving On: A Transitional Course for Graduating Seniors; The Peer Advocacy Seminar: A Peer-Based Advising Course. In addition, the Department of English co-sponsors English 310, a course in tutor training.
The program also provides advising, mediation, and advocacy, sponsors social and academic events, hosts an annual graduation celebration, and publishes a re-entry newsletter. In addition to these services for current Berkeley students, the program also offers monthly orientations (co-sponsored by the Office of Undergraduate Admission and Relations with Schools) for prospective students. The program is located on the mezzanine level of the Golden Bear Center and can be reached at 643-8070.

Religious Activities
Since the University is a state-supported institution, it does not offer chapel services or religious activity on campus. However, there are more than 35 churches and student religious clubs within a few blocks of the campus and six campus ministries that comprise the University Religious Council. For additional information, contact the Office of Student Activities and Services, 102 Sproul Hall, 642-6772.

Safety
The University maintains a police department on the Berkeley campus for your protection and safety. The department consists of approximately 77 fully trained, sworn officers, 43 other full-time personnel, and 55 student employees. The Police Department is located in 1 Sproul Hall (basement) and is open 24 hours a day, seven days a week. Police patrol the campus, the surrounding University properties, and Southside and vicinity, and they investigate all crimes committed on University property. For emergencies, including police, fire, or medical, call 9-911 from campus phones requiring that you dial “9” for outside calls, 911 from pay phones or off-campus phones. For general business, call 642-6760; for information about campus safety services and programs, call 64B-SAFE (642-7233); for information on emergency preparedness, call 642-9036; for lost and found, call 642-4936.

All bicycles on campus must have California bicycle licenses. Parking and Transportation licenses bicycles at 2427 Dwight Way on selected days during the week; call 642-4936 during normal business hours for days and times.

Night Safety Shuttle/Night Escort Service
The Night Safety Shuttle and Night Escort Service are available in the evening for safe access to your car, campus facilities, nearby home, or public transportation. Self-defense classes, safety presentations, and workplace violence presentations are also available for your safety. Call 642-7233 or 64B-SAFE for more information.

Sexual Assault Prevention, Medical Care, and Counseling
The University Health Services offers resources to maximize your personal safety and to contribute to a campus environment that does not tolerate sexual assault, promotes its prevention, and supports assault survivors. Prevention activities include workshops and other educational campaigns. Workshops are available for living centers, classes, and campus departments; call 642-7202.

Immediate response to survivors of sexual assault includes confidential crisis counseling as well as assistance and advocacy, as needed, for the initial medical evaluation, legal and police procedures, and academic and housing issues; call 642-6074. Services are available for both recent survivors and those working to recover from a past assault. We also provide short-term individual and group counseling and education sessions for friends, family, housemates, and co-workers of survivors.

Student Activities and Services
Student Activities and Services (SAS) staff help students learn to use the campus to its fullest. SAS encourages participation in co-curricular activities that, for many students, can be one of the most rewarding benefits of a Berkeley education.

SAS recognizes more than 400 student groups including fraternities and sororities, honor societies, student publications, and service organizations. Among SAS’s support services are leadership workshops and conferences, multicultural student group advising, and internships and awards. Volunteer opportunities are available through the Cal Corps Public Service Center (see Community Service Programs, above). SAS also assists with facility reservations and events management, disseminates campus information, and administers funding for student programs.
Registered students may seek free legal advice from the attorney for students and assistance with University-related problems through the ombudsperson for students (see Legal Services and Ombudsperson for Students, above). The campus Women's Resource Center is also affiliated with SAS; see Women's Resource Center, below.

SAS is located in 102 Sproul Hall (642-5171).

**Student Affirmative Action (SAA) and Educational Opportunity Programs (EOP)**

Berkeley recognizes and values the intellectual and cultural contributions of a student population that reflects the rich diversity of the people of California. To promote this diversity, Berkeley has a Student Affirmative Action (SAA) program for students from historically underrepresented ethnic groups, and an Educational Opportunity Program (EOP) for students from educationally disadvantaged and low-income backgrounds. These programs help students who are interested in attending college and who are already enrolled at Berkeley.

Through SAA, you may take advantage of a variety of special educational programs and support services. For example, you may participate in Early Academic Outreach developmental programs before you enroll at Berkeley. These programs will help you select the proper courses in high school and strengthen your academic skills. Through Immediate Outreach, counselors will advise you about your prospects for admission and help you with the admissions process. If you qualify for financial assistance, SAA provides application fee waivers, information about financial aid, and financial advising.

Once you enroll, SAA offers special services to help you make the transition to life at Berkeley. These include Summer Bridge programs, orientations, personal counseling, academic advising, and academic skills development. All students from underrepresented ethnic groups are eligible for SAA services.

The support services provided to educationally disadvantaged and low-income students by EOP complement the services offered by SAA. You may apply to EOP on Berkeley's undergraduate admission application.

**Note:** Eligibility criteria for SAA services are subject to change pursuant to changes in law and University policy.

**Student Learning Center**

The Student Learning Center is an academic support service that offers tutoring and learning skills assistance to University students. Learning skills staff provide individual and group tutorial services in writing, study skills, and reading improvement, and in introductory courses in the humanities, foreign languages, social sciences, mathematics, statistics, and sciences.

The center also provides services to re-entry students. The Student Learning Center is located in 198 Golden Bear Center, 642-7332.

**Student Life Advising Services**

Student Life Advising Services provides Educational Opportunity Program students (low-income, first-generation college students) and underrepresented students with academic, personal, financial, and career counseling and advising services. Professionally trained staff help students to develop problem-solving and self-management skills. The goals of SLAS are to motivate and direct students toward achieving academic excellence and to increase the number of low-income, first-generation, and underrepresented students who graduate from Berkeley. Counselors and peer advisers are available on both a drop-in and appointment basis to assist students with their concerns.

In addition to counseling and advising services, SLAS administers a wide range of programs designed to assist students in achieving their educational and career goals. These include the Achievement Awards Program, Reduced Study-Load Program, Housing Assistance Program, Summer Bridge Program, Peer Advising Program, schedule request review, emergency loans, and financial assistance.

Student Life Advising Services is a component of Academic Partnerships in Excellence (APEX), located in 140 Golden Bear Center #2440, 642-7224; http://www-slc.uga.berkeley.edu/slas/slas.htm.

**Women's Resource Center**

The Women's Resource Center sponsors programs, groups, internships, and publications that promote understanding of the changing roles of women and raise campus awareness of the issues affecting their experiences and opportunities as students.

The center also provides individual problem-solving assistance, referrals to campus and community resources, a home base for diverse student women's groups, and a comfortable resource room and study area for exploration of personal and academic interests.

If you would like to make new friends, find support in coping with a crisis, build leadership skills, advocate for responsive policies and programs, organize a campus-wide event, create a specialized support group, or gain work experience, stop by the Women's Resource Center and introduce yourself. All members of the campus community who would like to contribute or get involved are welcome. The center is located at 250 Golden Bear Center, 642-4786.
Undergraduate Education

UC Berkeley students volunteer as tutors to children at Washington Elementary School, Pt. Richmond, as part of the Berkeley Pledge, an ambitious outreach effort launched by Chancellor Tien in 1995. The campus works with 25 elementary, middle, and high schools in the Bay Area in a pilot project to help a greater number of disadvantaged youngsters become eligible for a UC education.
Myths and Facts About Majors and Careers

Myths about the relationship between your major and career goals abound. When you choose a major, you should have no misconceptions about the undergraduate preparation you will need to pursue your goals. Several popular myths about majors and careers are debunked below.

Myth: When you choose a college major you are choosing a career.

Fact: A study conducted by the College Placement Council found that the majority of college graduates are successfully employed in fields not directly related to their academic majors. A few majors such as engineering, computer science, and accounting prepare students for fairly specific career fields, but most majors, especially in the liberal arts, give graduates a wide range of career options.

Myth: You should choose a career that is in high demand.

Fact: The job market moves in cycles. The career that is in high demand now may be glutted by the time you finish college—either because so many people have already entered that field or because economic patterns have changed. New fields are also constantly opening up. So it is better to choose a major and career that genuinely interest you.

(continued on next page)

Undergraduate Education

As a prospective Berkeley undergraduate, you should give careful thought to preparing yourself adequately in reading, writing, mathematics, and other areas related to your intended major. The more comprehensive and challenging your high school or college program is, the better prepared you will be for work at Berkeley.

High school honors-level and advanced placement courses are good preparation for Berkeley, regardless of the major you choose. The nature of instruction and the subject matter you cover in advanced courses will give you a definite advantage in your studies. These challenging courses will help you develop the good study habits and skills you will need at Berkeley.

Applying for Admission

Note: The admissions requirements for freshmen and transfer students outlined on the following pages apply to applicants for fall 1998 and later. For admissions requirements for fall 1997, see the 1995-97 General Catalog.

How to Apply

If you are interested in applying to Berkeley, you can obtain an undergraduate application packet from your high school or college counselor’s office or any of the University of California campuses’ admissions offices. The packet contains an application form and explains the application process, fees, and all the items you must submit with your application. You may apply to as many UC campuses as you wish, using one application form. (The San Francisco campus, which is devoted to the health sciences, has its own application and filing procedures.)

You should be aware of the importance of the priority filing periods. Berkeley has received an increasing number of applications in the last few years, so generally we are not able to accept applications after the filing period ends.

Priority Filing Period

Fall semester: File November 1-30

Note: Berkeley does not accept applications for the spring semester. However, we will continue to defer students to the spring semester from the fall applicant pool. For information about application fees and fee waivers, see below; see also Fees and Financial Aid, beginning on page 69.

Application Fees and Fee Waivers

The basic application fee of $40 entitles you to apply to one University campus. If you apply to more than one campus, you must pay an additional $40 for each campus you select. These fees are not refundable. You must include your fees with the application or it will not be processed.

The University will waive application fees for up to three campuses in order to assist students for whom payment is a barrier to application to the University. Students who qualify for fee waivers and who select more than three campuses must pay $40 for each additional choice. To be accepted for the fee waiver program, your family income and the number of dependents must be within specific guidelines. The fee waiver program is for U.S. citizens and permanent residents only.

There are four ways to obtain a fee waiver:

1. If you are in high school, you may use the College Board fee waiver. You may obtain an application for this waiver from your high school counselor.
2. If you are enrolled in the EOPS program in a California community college, you may obtain a fee waiver from your EOPS office.
3. You may obtain a fee waiver application from Berkeley’s Office of Undergraduate Admission and Relations with Schools, or the EOP Office.
4. If you are unable to obtain a fee waiver from any of the sources mentioned above, you may attach a letter to your admission application requesting consideration for a fee waiver. In the letter, describe your family’s income, the number of dependents, and the hardship that makes payment of the application fee difficult. Berkeley will review the letter and may grant you a fee waiver if appropriate.
Competitive Admission at Berkeley

All programs at Berkeley receive more applicants than they can accept. For fall 1996, Berkeley was able to admit only 9,030 out of 25,000, or about 36 percent, of its freshman applicants and only 2,440 out of 7,070, or about 34 percent, of its transfer applicants. Consequently, to gain admission to Berkeley, you need to present an academic profile much stronger than that represented by the minimum University of California admission requirements. See page 442 in the Appendix for more information on selection criteria for the Berkeley campus. You can also obtain information online at http://www.uga.berkeley.edu/ouars/.

Admission As a Freshman

Berkeley considers you a freshman applicant if you have graduated from high school and have not enrolled to satisfy this requirement, you must complete the Subject Requirement. Berkeley’s admissions requirements. Your counselor or principal will have a copy of this list.

Minimum Eligibility Requirements

California Residents*

To be eligible for admission to Berkeley, you must meet the subject, scholarship, and examination requirements described below.

Subject Requirement

To satisfy this requirement, you must complete the high school courses listed below with a grade-point average defined by the scholarship requirement. This sequence of courses is also known as the “a-f” requirements. You must take 15 units of high school courses to fulfill the subject requirement, and at least 7 of the 13 units must be taken in your last two years of high school. (A unit is equal to an academic year, or two semesters, of study.)

Applicants from California high schools: To be accepted to Berkeley, the courses must appear on a list certified by your high school principal as meeting Berkeley’s admission requirements. Your counselor or principal will have a copy of this list.

a. History/Social Science—Two years required. Two years of history/social science, including one year of U.S. history or one-half year of U.S. history and one-half year of civics or American government; and one year of world history, cultures, and geography.

b. English—Four years required. Four years of college preparatory English that include frequent and regular writing, and reading of classic and modern literature. Not more than two semesters of 9th-grade English can be used to meet this requirement.

c. Mathematics—Three years required, four recommended. Three years, including elementary and advanced algebra and two- and three-dimensional geometry. Approved integrated math courses may be used to fulfill this requirement, as may math courses taken in the 7th and 8th grades that your high school accepts as equivalent to its own courses.

University of California Freshman Eligibility Index

<table>
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<tr>
<th>A-F GPA</th>
<th>ACT Comp.</th>
<th>SAT I Total</th>
<th>A-F GPA</th>
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ACT is scored in intervals of 1 point, from a minimum of 1 to a maximum of 36. SAT I is scored in intervals of 10 points, from 400 to 1600. Use the first score if you took the test before April 1995. Use the second score if you took the test after April 1995.

ACT is scored in intervals of 1 point, from a minimum of 1 to a maximum of 36. SAT I is scored in intervals of 10 points, from 400 to 1600. Use the first score if you took the test before April 1995. Use the second score if you took the test after April 1995.

d. Laboratory Science—Two years required, three recommended. Two years of a laboratory science providing fundamental knowledge in at least two of these three areas: biology, chemistry, and physics. Laboratory courses in earth/space sciences are acceptable if they have as prerequisites or provide basic knowledge in biology, chemistry, or physics. The appropriate two years of an approved integrated science program can be used to fulfill this requirement. Not more than one year of 9th-grade laboratory science can be used to meet this requirement.

e. Language Other than English—Two years required, three recommended. Two years of the same language other than English. Courses should emphasize speaking and understanding and include instruction in grammar, vocabulary, reading, and composition. Courses in languages other than English taken in the 7th and 8th grades may be used to fulfill part of this requirement if your high school accepts them as equivalent to its own courses.

f. College Preparatory Electives—Two years required. Two units (four semesters) in addition to those required in "a-e" above, chosen from at least two of the following categories. Students may not count from one category more than once. Berkeley considers you eligible for admission if you have completed the following courses with the grade-point average defined by the scholarship requirement. Approved integrated math courses may be used to fulfill this requirement, as may math courses taken in the 7th and 8th grades that your high school accepts as equivalent to its own courses.

*Residency status: The requirements for California residents also apply to dependents of University of California graduates and employees. The definition of legal residence for tuition purposes is different. If you have questions about your residency status, see the Appendix or contact the Office of the Registrar at 642-1614.
**Myth:** You cannot do much beyond working hard at classes in your major to improve your chances of career success.

**Fact:** Courses outside your major and independent study projects are important, too. You will gain valuable experience by participating in extracurricular activities such as student organizations, sports, social groups, and student government. In addition, internships, summer jobs, and volunteer activities will help you define your interests, develop skills, strengthen your résumé, and establish professional contacts in the working world.

**Myth:** Your first job will determine your career. Therefore you ought to be completely sure of your choice when you make an academic or career decision.

**Fact:** You cannot be entirely sure of any decision. Each career has its advantages and disadvantages; any choice involves some risk. Do not think that you cannot change your mind. According to the Bureau of Labor Statistics, the average person changes careers three times in a lifetime—and even within a specific field, you are usually free to explore.

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the following areas: history, English, advanced mathematics, laboratory science, language other than English (a third year in the language used for the "e" requirement, or two years of another language), social science, and visual and performing arts.

**Scholarship Requirement**

The scholarship requirement defines the grade-point average (GPA) you must attain in the "a-f" subjects described above. If your "a-f" GPA is below 3.3 but above 2.81, you have met the minimum requirement if you achieve the necessary college entrance test score indicated in the eligibility index on the previous page.

The University calculates your GPA in the "a-f" subjects by assigning point values to the grades you earn, totaling the points, and dividing the total by the number of "a-f" course units. Points are assigned as follows: A=4 points, B=3 points, C=2 points, D=1 point, F=0 points.

Only the grades you earn in "a-f" subjects in the 10th, 11th, and 12th grades are used to calculate your GPA. Courses you take in 9th grade can be used to meet the subject requirement if you earn a grade of C or better, but they will not be used to calculate your GPA.

**Honors courses:** The University assigns extra points for up to 4 units of certified honors-level and advanced placement courses taken in grades 10-12: A=5 points, B=4 points, C=3 points. No more than 2 units of certified honors-level courses taken in the 10th grade may be given extra points. A grade of D in an honors or advanced placement course does not earn extra points.

The courses must be in the following "a-f" subjects: history, English, advanced mathematics, laboratory science, or foreign language, and they must be certified at your high school as offered at the honors level. In these fields, as well as in the fields of computer science, social science, and the visual and performing arts, courses that are designed to prepare students for Advanced Placement Examinations, the International Baccalaureate Higher Level Examination, and college courses that are transferable to the University are acceptable honors-level courses.

**D and F grades:** D and F grades in the "a-f" courses must be repeated or validated. Consult with your counselor to determine how these grades can be improved and how the University will use them in evaluating your scholarship record.

Grades will not be used for repeated courses in which you initially earned a grade of C or better.

**Examination Requirement**

You must submit the following test scores:

Either the SAT I: Reasoning Test or the American College Test (ACT). The verbal and mathematics scores on the SAT I must be from the same sitting. The ACT composite score must be submitted.

Three SAT II: Subject Tests, including Writing, Mathematics Level IC or IIC, and one test in one of the following areas: English literature, foreign language, science, or social studies.

For information about the tests you must take to fulfill the examination requirement, talk to your school counselor or write to the appropriate testing organization. Berkeley requires you to take these tests by December of your senior year.
Admission by Examination Alone
If you do not meet the subject and scholarship requirements, you may be able to qualify for admission to the University by examination. To satisfy the minimum requirements for qualifying by examination alone, you must achieve a total score of at least 1400 on the SAT I if taken April 1995 or later (at least 1300 if taken before April 1995) or a composite score of 31 or higher on the ACT. In addition, you must earn a total score of 1760 or higher on the three SAT II: Subject Tests, with a minimum score of 530 on each test if taken May 1995 or later (or a total score of at least 1650 with a minimum score of 500 on each test if taken before May 1995). You cannot qualify for admission by examination alone if you have completed 12 or more units of transferable course work at another college or university following high school graduation, or if you have taken transferable college courses in any subject covered by the SAT II: Subject Tests.

Admission of Nonresident Applicants
The minimum freshman admission requirements for nonresidents of California are the same as those for residents except for the following:
Scholarship requirement: Your grade-point average in the “a-f” subjects must be 3.4 or higher, regardless of your college entrance examination score. The eligibility index is used only for California residents.

Admission by examination alone: You must score at least 1400 on the SAT I if taken April 1995 or later (or 1300 if taken before April 1995), or 31 on the ACT. Your total score on the three required SAT II: Subject Tests must be at least 1850, with a minimum score of 530 on any single test if taken May 1995 or later (or a total score of at least 1730 with a minimum score of 500 on each test if taken before May 1995).

Admission As a Transfer Student
Berkeley has a strong commitment to transfer students and has worked hard in recent years to develop programs to help students with the transfer process. Following California’s Master Plan for Higher Education, Berkeley gives high priority to students transferring from California’s community colleges. In fall 1996, we accepted approximately 1,930 of these students.

Most programs at Berkeley receive applications from far more transfer students than they can accept. For fall 1996 the campus was able to admit approximately 2,440 out of 7,070 junior-level applicants, or 34 percent. We were also able to defer the admission of approximately 500 fall applicants to the spring 1997 term. Consequently, to be competitive you need to present an academic profile much stronger than that represented by the minimum UC admission requirements and complete preparation for your intended field of study.

In general, Berkeley admits transfer applicants at the junior level only—or students who have completed at least 60 UC-transferable semester units. Applicants to the Colleges of Chemistry, Engineering, Environmental Design, Letters and Science, and the Walter A. Haas School of Business must complete all required units and prerequisites by the end of the preceding spring term.

You can find more information concerning general transfer admission requirements to the University of California system in the brochure “Answers for Transfers,” available in your community college counseling office or online at http://www.ucop.edu:80/pathseways/infoctr/infocr.html. For specific information on preparing to transfer to Berkeley, see the Appendix, the flyers “Transfer Selection” and “Breadth Requirements for Junior Transfers to the College of Letters and Science,” and the announcements of the individual colleges and schools. You can also obtain information online at http://www.uga.berkeley.edu/ouars/.

Minimum Eligibility Requirements
Requirements for California Residents*
There are three ways in which you can meet the University’s minimum admission requirements for transfer students:

1. If you were eligible for admission to the University when you graduated from high school—meaning you satisfied the subject, scholarship, and examination requirements—you are eligible to transfer if you have a C (2.0) average in your transferable college course work.

2. If you met the scholarship requirement but did not satisfy the subject requirement, you must take transferable college courses in the subjects you are missing, earn a grade of C or better in each of these required courses, and earn an overall C (2.0) average in all transferable college course work to be eligible for transfer. If you met the scholarship requirement but did not meet the examination requirement, you must complete a minimum of 12 semester (18 quarter) units of transferable work and earn an overall C (2.0) average in all transferable college course work completed.

3. If you were not eligible for admission to the University when you graduated from high school because you did not meet the scholarship requirement, you must
   • complete 90 quarter units or 60 semester units of transferable college credit with a grade-point average of at least 2.4, and
   • complete a course pattern requirement to include: (a) two transferable college courses (3 semester or 4-5 quarter units each) in English composition, and

*Residency status: The requirements for California residents also apply to dependents of University of California graduates and employees. The manner in which legal residence is defined for tuition purposes is different. If you have questions about your residency status, see the Appendix or contact the Office of the Registrar at 642-1614.
(b) one transferable college course (3 semester or 4-5 quarter units) in mathematical concepts and quantitative reasoning, and

(c) four transferable college courses (3 semester or 4-5 quarter units each) chosen from at least two of the following subject areas: the arts and humanities, the social and behavioral sciences, the physical and biological sciences. (Students who satisfy the Intersegmental General Education Transfer Curriculum (IGETC) before transferring to the University will satisfy Option 3b above of the transfer admission requirements.)

Requirements for Nonresidents

The minimum admission requirements for nonresident transfer applicants are the same as those for residents except that nonresidents must have a grade-point average of 2.8 or higher in all transferable college course work.

Intercampus Transfers

If you are registered on any campus of the University or were previously registered in a regular session of the University, you may apply for transfer to another campus of the University by filing the undergraduate application. Filing dates and application fees are the same as those listed for new applicants. Note: Intercampus transfer applicants receive no priority in the selection process.

Admission of International Applicants

International students are those holding or intending to apply for nonimmigrant visas. If you are applying from another country, you should request further information about admission to Berkeley, visas, special examinations, fees and expenses, housing, and travel. Direct your inquiries to the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall #5800, or call 642-3246. If you need to improve your English language skills, you should contact the English Language Program, UC Berkeley Extension, 1995 University Avenue #7022, Berkeley, CA 94720-7022, USA.

Readmission

If you formally withdraw from Berkeley, were absent for one or more semesters, or are returning to Berkeley in the Limited Status or Second Bachelor’s programs, you must file an Undergraduate Application for Readmission. Application deadlines are April 15 for fall admission and August 15 for spring admission. Applications must be accompanied by a $40 readmission fee. If you attended other colleges or universities while you were away from Berkeley, you must send an official transcript to Berkeley immediately. Address correspondence to the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall #5800, or call 642-0734.

Admission by Exception

If you do not meet the regular admission requirements, you may be eligible for admission by exception. You will have to demonstrate your ability and potential to succeed at the University. Requests for consideration for admission by exception should be discussed in the essay portion of your application for admission. If you have questions, contact the Office of Undergraduate Admission and Relations with Schools at 642-3175.

Limited Status

Limited-status students are a special category of undergraduates who have earned an undergraduate degree with a record of superior scholarship (an overall grade-point average of at least 3.3), but need additional undergraduate course work for a specific and clearly defined purpose. Only the Colleges of Chemistry, Natural Resources, and Engineering will consider admitting students in limited status.

Limited status is granted only in special circumstances; students' needs, abilities, and programs should have enough urgency to justify admitting them in place of students in regular status, and there should be no reasonable alternative available. Use of limited status to enable students to raise their scholarship average is not permitted.

Work Toward a Second Bachelor's Degree

If you are a candidate for a second bachelor's degree, you will be considered for admission only if you need an entirely new major program for a valid educational purpose. Only the Colleges of Chemistry, Natural Resources, and Engineering and the School of Optometry will consider admitting students for a second bachelor's degree. To apply for this program, you must have earned an undergraduate degree with a record of superior scholarship (an overall grade-point average of at least 3.3) and must have completed all lower division requirements for your proposed major with excellent grades. Your proposed program must represent a definite change in field from your first undergraduate degree, and you must prove that you require the second degree for the stated purpose. If you need course work but not a degree in a new field, you should apply for limited status (see above) instead.

In practice, Berkeley admits very few students to the limited status or second bachelor’s programs each year. Detailed information about these programs is available in the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall #5800, or call 642-3175.

If you are not eligible for the second bachelor’s or the limited status programs, you may consider concurrent enrollment through UC Berkeley Extension as an alternative. For information call 642-4111.
Tele-BEARS

Tele-BEARS is an interactive computer system that allows you to enroll in classes by using a touchtone telephone or a computer connected to the World Wide Web. A recorded human voice on the telephone version instructs you when to respond and what to enter for each transaction. Because Tele-BEARS is interactive, you always receive the most immediate, up-to-the-moment information regarding your registration and class enrollment.

How Tele-BEARS Works

To ensure the fairest possible distribution of courses to the student body, enrollment in classes is spread over two phases and an adjustment period. Phase I, starting toward the end of the previous semester, allows you to enroll in a maximum of 10 units plus one physical education activity course. In Phase II, starting immediately after Phase I, you may complete your enrollment by enrolling in courses up to your college or school maximum. You may then add and drop courses during the adjustment period, which starts one week before instruction and extends through the first three weeks of instruction.

Access to Tele-BEARS is regulated by pre-assigned appointments which are spread throughout each phase period. For security purposes, you are assigned a unique Personal Identification Number (PIN) which must be entered after your Student ID number in order to use Tele-BEARS.

To enroll and register through Tele-BEARS, follow these steps:

Receive Your Registration Form
The Office of the Registrar will mail you a Tele-BEARS registration form indicating your PIN and appointment times.* If you require academic advising, you also will be required to obtain an Adviser Code (AC) from your major adviser or college/school Dean's Office.** The AC must be entered when you first access Tele-BEARS each semester. If you will be a new or readmitted student, you also will be mailed a Schedule of Classes which lists the meeting times and locations of all courses to be given at Berkeley for the semester.

Enroll in Classes
With the Schedule of Classes and the General Catalog, you can determine a class schedule. If you will be a new student, you are encouraged to attend the Cal Student Orientation (CalSO) program to obtain your AC and to help you choose classes and formulate a schedule tailored to your particular academic interests. Contact the CalSO office, 642-4970, for information.

Once you have selected your classes, you are ready to use Tele-BEARS to enroll.

Pay Registration Fees
A monthly billing statement indicating all University fees due will be mailed to you by the Loans and Receivables Office. You may pay your fees in full or in five installments on the Deferred Payment Plan. Fee payment (either in full or the first installment) is due on July 15 for the fall semester and December 15 for the spring semester.

The Deferred Payment Plan
You may pay your registration fees in five installments if you wish. A nonrefundable processing fee will be charged to your first installment. Your billing statement will indicate the amount due for the first payment; subsequent statements for the remaining payments will be mailed to your local address on file with the Office of the Registrar. For full information about the Deferred Payment Plan, read the billing statement or call the Loans and Receivables Office at 642-3190.

*Registration forms for continuing and readmitted students will be mailed starting mid-March for the fall semester and mid-October for the spring semester. Forms for new students will be mailed starting early June for the fall semester and early November for the spring semester.

**New students in the College of Engineering and the College of Letters and Science must obtain their ACs from the Cal Student Orientation Program (CalSO).
Alternatives to Overcrowded Courses

If you are unable to get your first choice of a particular class, think creatively. Check with an adviser to determine whether an alternative course is a viable option for you. Consider these examples:

Economics: Environmental Economics and Policy (ECON 1) is accepted as equivalent to Econ 3; ECON 101, to Econ 125; ECON 151, to Econ 171.

Psychology: Consider alternatives outside the Psychology Department: cognitive science (UGIS), developmental psychology (Educatiion), biological psychology (MCB), or organizational psychology (Business). See also Social Welfare and Public Health.

Literature: Many language departments offer literature courses in translation. For an exhaustive list, see the Schedule of Classes.

Political Science: Consider offerings in Public Policy and Environmental Science, Policy, and Management.

Letters and Science Breadth Requirements: L&S accepts many classes from other colleges in satisfaction of its breadth requirements. Use Info-BEARS, the Electronic Schedule of Classes, and the L&S publication "Earning Your Degree" to find alternatives to overcrowded courses that meet the L&S breadth requirements.

Receive Your Confirmed Class Schedule

At the end of Phase II, the Office of the Registrar will send you a Confirmed Class Schedule indicating all classes for which you have enrolled through Tele-BEARS.

Info-BEARS

Info-Bears is Berkeley's information retrieval system and an adjunct to Tele-BEARS. With Info-BEARS, you can hear your final grades for the previous term, the status of your financial aid application, your current class schedule, enrollment restrictions for a particular course, and much more. Info-BEARS is available Monday through Friday from 7 a.m. to 10 p.m., on Saturday from 7 a.m. to 7 p.m., and on Sunday from noon to 6 p.m. The phone number is 642-9400. For more information, see the Schedule of Classes.

Bear Facts

Bear Facts is an online computer system that provides information regarding your registration, grades, financial aid, billing, class schedule, and more. Unlike Info-BEARS (which provides similar information via telephone), Bear Facts is visual—the information is displayed directly on a computer screen.

You can access Bear Facts from a number of sites on campus, or you can use it on your Macintosh or PC at home. For more information, including instructions on downloading the software, see the Office of the Registrar's Web site at http://registrar.berkeley.edu:4202.

Undergraduate Majors and Degrees

Planning for a Major

The decision on the choice of a major is a very important one and should be made on the basis of your interests and abilities as well as your career goals. You should look carefully into the programs available by using this catalog and by visiting departments in which you are interested. Your adviser can help you explore the possibilities of interdisciplinary majors, which you may take by declaring a major group or field major. If the major you are interested in is offered in more than one college or division, your adviser can help you choose the one that best suits your academic goals.

You are strongly urged to declare your major as soon as possible and should begin thinking about possible majors in your first year at Berkeley. Some majors require a full four years to complete; most majors require that some or all of the lower division major requirements be completed before you may be accepted into the major. Since you are expected to be accepted into a major by the time you have completed 60 units, these lower division major requirements should be planned into your program for the first two years. It is possible for you to plan a program that would include preparation for more than one major, an easy task if the majors in question have some lower division requirements in common.

Some majors are very crowded and cannot accommodate all applicants. You should consult closely with the departments in which you have an interest to learn of any restrictions that have been placed on entry to the major.

Declaration and Change of Major

Regulations and procedures for declaring the major vary for each college. You may, at any time up to the last semester of residence, file a petition for a change of major. (This policy does not apply to students in the College of Engineering.) You must secure approval for this action from the dean or other authorized person in the college or department to which you are transferring.

Preparation for Graduate Study

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

Undergraduate Degrees

African American Studies, B.A.
American Studies, B.A.
Ancient Near Eastern Archaeology and Art History, B.A.
Anthropology, B.A.
Architecture, B.A.
Art (History of), B.A.
Art (Practice of), B.A.
Asian Studies, B.A.
Asian American Studies, B.A.
Astrophysics, B.A.
Bioengineering, B.S.
Bioresource Sciences, B.S.
Business Administration, B.S.
Celtic Studies, B.A.
Chemical Engineering, B.S.
Chemistry, B.A. or B.S.
Chicano Studies, B.A.
Civil and Environmental Engineering, B.S.
Classical Civilization, B.A.
Classical Languages, B.A.
Cognitive Science, B.A.
Comparative Literature, B.A.
Computer Science, B.A. or B.S.
Conservation and Resource Studies, B.S.
Development Studies, B.A.
Dramatic Art, B.A.
Dramatic Art—Dance, B.A.
Dutch Studies, B.A.
Earth Resources Engineering, B.S.
Earth Science, B.A.
East Asian Languages, B.A. (Chinese, Japanese, Altaic)
Economics, B.A.
Electrical Engineering and Computer Sciences, B.S.4
Engineering, Nine Double Major Programs, B.S.5
Engineering Mathematics and Statistics, B.S.
Engineering Physics, B.S.
English, B.A.
Entomology, B.S.
Environmental Engineering Science, B.S.
Environmental Sciences, B.A.
Ethnic Studies, B.A.
Film, B.A.
Forestry, B.S.
French, B.A.
Genetics and Plant Biology, B.S.
Geography, B.A.
Geology, B.A.
Geophysics, B.A.
German, B.A.
Greek, B.A.
History, B.A.
Human Biodynamics, B.A.
Industrial Engineering and Operations Research, B.S.
Integrative Biology, B.A.
Interdisciplinary Studies, B.A.
Italian, B.A.
Landscape Architecture, B.A.
Latin, B.A.
Latin American Studies, B.A.
Legal Studies, B.A.
Linguistics, B.A.
Manufacturing Engineering, B.S.
Mass Communications, B.A.

Materials Science and Engineering, B.S.
Mathematics, B.A.
Mathematics, Applied, B.A.
Mechanical Engineering, B.S.
Middle Eastern Studies, B.A.
Mineral Engineering, B.S.8
Molecular and Cell Biology, B.A.
Molecular Environmental Biology, B.S.
Music, B.A.
Native American Studies, B.A.
Near Eastern Studies, B.A.
Nuclear Engineering, B.S.
Nutrition and Clinical Dietetics, B.S.6
Nutrition and Food Science, B.S.
Optometry, O.D.7
Peace and Conflict Studies, B.A.
Petroleum Engineering, B.S.8
Philosophy, B.A.
Physical Sciences, B.A.
Physics, B.A.
Political Economy of Industrial Societies, B.A.
Political Economy of Natural Resources, B.S.
Political Science, B.A.
Psychology, B.A.
Religious Studies, B.A.
Resource Management, B.S.
Rhetoric, B.A.
Scandinavian, B.A. (Danish, Norwegian, Swedish)
Slavic Languages and Literatures, B.A.
Social Welfare, B.A.
Sociology, B.A.
Soil Environment, B.S.
South and Southeast Asian Studies, B.A.
Spanish, B.A.
Statistics, B.A.
Vision Science, B.S.9
Women's Studies, B.A.

1Applicants interested in preveterinary medicine should apply for the major in bioresource sciences in the College of Natural Resources and contact the preveterinary adviser after admission.
2The Haas School of Business requires completion of 60 semester units for admission into its program.
3A chemistry major may be taken either in the College of Chemistry (B.S.) or in the College of Letters and Science (B.A.).
4Computer science may be studied either in the College of Engineering (B.S. in electrical engineering and computer sciences) or in the College of Letters and Science (B.A.).
5See the Announcement of the College of Engineering for details.
6Admission into the nutrition and clinical dietetics program requires completion of 56 acceptable semester units.
7Admission into the optometry program requires completion of 90 acceptable semester units.
8Closed to new admissions.
9Applicants interested in vision science should apply for optometry and contact an adviser after admission.
Minors

Minors are offered at Berkeley in many departments and groups in the College of Letters and Science:

- African American Studies
- Anthropology
- Art History
- Art Practice
- Asian Studies
- Astrophysics
- Celtic Studies
- Classics
- Creative Writing (UGIS)
- Dance
- Demography
- Dramatic Art
- Dutch Studies
- English
- Ethnic Studies
- French
- Geography
- German
- Italian Studies
- Lesbian, Gay, Bisexual, and Transgender Studies (UGIS)
- Mathematics
- Music
- Near Eastern Studies
- Philosophy
- Physics
- Political Economy of Industrial Societies
- Public Policy
- Religious Studies (UGIS)
- Rhetoric
- Scandinavian
- Slavic Languages and Literatures
- South and Southeast Asian Studies
- South Asian Archaeology
- Spanish and Portuguese
- Women's Studies

Minors are also offered in the College of Environmental Design, in the College of Natural Resources, and in the School of Education. For more detailed information and lists of the minors available, see the section “Colleges, Schools, and Interdisciplinary Programs” beginning on page 87.

Undergraduate Degree Requirements

As soon as you have been accepted for admission to Berkeley, you should learn the requirements you will have to fulfill to earn your bachelor’s degree. These requirements are prescribed by four sources: the University, the Berkeley campus, your college or school, and your department. All are summarized below. For more information, pick up a copy of “Undergraduate Degree Requirements for Graduation” from the Office of the Registrar, 120 Sproul Hall.

University Requirements

The University sets two general requirements for the baccalaureate degree: Subject A and American History and Institutions.

Subject A Requirement

The University assumes that you are proficient in English and in writing about academic topics. Fulfillment of the Subject A requirement is a prerequisite to enrollment in all freshman reading and composition courses. If you have not passed the Subject A examination or otherwise fulfilled the requirement when you enter the University, you should enroll in College Writing 1A during your first or second semester. College Writing 1A is a 6-unit course that satisfies the Subject A and the first half of the reading and composition requirements.

In addition to a passing score on the Subject A examination, the Office of Undergraduate Admission and Relations with Schools accepts the following means of fulfilling the Subject A requirement before you enter the University:

- A minimum score of 660 on the SAT II: Subject Test in Writing taken since May 1995.
- A minimum score of 600 on the SAT II: Subject Test in Writing taken May 1994 through April 1995.
- A minimum score of 600 on either form of the College Board Achievement Test in English Composition—“with essay” or “all multiple choice” taken before May 1994.
- A minimum score of 3 on the Advanced Placement Test in English Composition and Literature or in English Language and Composition.
- A minimum score of 5 on the International Baccalaureate Higher Level Examination in English (Language A only).
- A score of “Pass for Credit” on the California State University and Colleges English Equivalency Examination (discontinued 1993).
A minimum grade of C in a transferable college-level English composition course completed at an accredited college or university and accepted by the Office of Undergraduate Admission and Relations with Schools at Berkeley.

American History and Institutions Requirements

The American History and Institutions requirements are based on the principle that a U.S. resident graduated from an American university should have an understanding of the history and governmental institutions of the United States. These requirements may be met as follows:

I. Options for Students Entering Berkeley for the First Time Fall Semester 1983 or Later:

Both the American History and the American Institutions requirements may be satisfied in the following ways:

- By fulfilling the portion of the "a" subject requirement for admission that consists of one year of U.S. history or one-half year of U.S. history and one-half year of U.S. government in high school with a grade of C or better.

- By taking one quarter or semester of a transferable course in basic U.S. history or U.S. government at a college or university before entering Berkeley. Inquiries about specific courses should be directed to the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall.

- By passing the high school Advanced Placement American History exam with a score of 3 or better or the SAT II or Achievement Test in U.S. history with a score of 550 or better (500 or better if taken before April 1995).

- For students transferring from another UC campus: by taking any course or courses that satisfy the AH&I requirements of that campus.

Students who have not satisfied the AH&I requirements before entering Berkeley may satisfy them in the following ways:

- By taking the American History and/or American Institutions exams. These exams are graded passed/not passed and are offered on campus throughout the year. Contact the AH&I Office for information and reading lists.

- By taking, at Berkeley, History 7A or 7B for the History requirement, and Political Science 1 or 100 for the Institutions requirement. (Students who took other courses before fall semester 1988 may check with the AH&I Office for possible AH&I credit.)

- By taking a course or courses, approved by the AH&I Office, at another collegiate institution.

(continued on next page)
1928: The crew team wins the first of three Olympic championships for Berkeley crews.

1933-65: Brutus Hamilton, two-time Olympic participant in the 1920s, coaches Cal's track and field teams for 33 years.

1941: Cal mascot "Oski" takes first bow at a freshman rally.


1947-56: Poppy Waldorf coaches the Bears in football, completing two semesters of U.S. history with an average grade of B or better for the History requirement and one semester of U.S. government with a grade of B or better for the Institutions requirement.

1948: Jackie Jensen earns first team All-America honors for OS running back and later twice earns All-American status for Cal's baseball team, helping the Bears to the NCAA title in 1947.

1959: Pete Newell coaches the Golden Bears men's basketball team to the national championship. They're runner-up in 1960.

(continued on next page)

Berkeley Campus American Cultures Breadth Requirement

Students who entered Berkeley in fall 1991 or thereafter in lower division standing with 0-55 semester units and all students who entered in fall 1993 or thereafter must satisfy the American cultures breadth requirement in order to graduate. You satisfy the requirement by passing, with a grade not lower than C- or P, an American cultures course. You may take an American cultures course any time during your undergraduate career at Berkeley. International students must satisfy the requirement.

A Berkeley faculty committee determines which courses satisfy the requirement. Faculty from many departments teach American cultures courses, but all courses have a common framework. The courses focus on themes or issues in United States history, society, or culture; address theoretical or analytical issues relevant to understanding race, culture, and ethnicity in our society; and take substantial account of groups drawn from at least three of the following: African Americans, indigenous peoples of the United States, Asian Americans, Chicano/Latino Americans, and European Americans; and are integrative and comparative in that students study each group in the larger context of American society, history, or culture. The courses also provide students with the intellectual tools to understand better their own identity and the cultural identity of others in their own terms.

American cultures courses may also meet other requirements, such as a college or school's breadth requirement or a department's major requirement.

See the Schedule of Classes for the specific American cultures courses offered each semester. See your academic adviser if you have questions about your responsibility to satisfy the American cultures breadth requirement.

College and School Requirements

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

Reading and Composition Requirement

The Berkeley campus is strongly committed to developing high levels of ability in critical thinking and communication among its undergraduates. Hundreds of courses require long papers and a number of courses provide training in writing or speaking. In addition to the University-wide Subject A requirement, the College of Letters and Science and most other colleges and schools require two semesters of lower division work in composition. The following departments and programs offer writing courses that satisfy the reading and composition requirement:

- African American Studies
- History of Art
- Asian American Studies
- Celtic Studies
- Comparative Literature
- Dramatic Art
- English
- German
- Linguistics
- Native American Studies
- Rhetoric
- Scandinavian
- Slavic
- South Asian
- Undergraduate and Interdisciplinary Studies
- Women’s Studies

In addition, a number of departments offer workshop sections of larger courses that satisfy only the second half of the reading and composition requirement. Such courses are marked with a W (for example, Linguistics 5W and Slavic Languages and Literatures 37W). Because each course has a slightly different focus, you should contact the individual departments for details and consult your college or school for the particular courses that satisfy its requirements.

Minimum Scholarship Requirement

If you fail to maintain the minimum grade-point average prescribed by your college or school, you will normally be dismissed or put on probation. Since scholarship rules are applied only at the close of regular sessions, grade points that you earn in a University of California summer session or by removing an Incomplete grade are not taken into consideration until the close of your next semester of attendance.

Residence Requirement

After you have completed 90 units toward the bachelor’s degree, you must complete at least 24 of the remaining units in residence in no fewer than two semesters in the college or school of the University in which you will take your degree. You must begin these final 24 units in the semester in which you exceed 90 units. You should consult the announcement of your college or school for details concerning the senior residence requirement as it pertains to the summer session.

Departmental Requirements

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 with business administration, optometry, and others—the school and the department are synonymous. In some cases a major may embrace more than one department, as with the interdisciplinary studies field major in the College of Letters and Science.

Major Requirements

Major requirements that must be fulfilled before you may receive a baccalaureate degree are outlined in each department in the “Courses and Curricula” section of this catalog. See also your department adviser.

1970: Eddie Hart sets the world record for 100 meters and helps the U.S. Olympic team to the gold medal and world record in the 400 meter relay.
1974: Steve Barkowski, All-America quarterback, leads the nation in passing, with 2,580 yards.
1982: Cal beats Stanford with “The Play,” a five-lateral kickoff return for a touchdown as time runs out.
1984: Mary T. Meagher, ’87, wins three gold medals in swimming at the Los Angeles Olympics.
1988: Matt Biondi, ’87, wins five gold medals in swimming at the Seoul Olympics.
1991: Russell White earns first team All-America honors in football and ranks as Cal’s all-time leading rusher, with 3,367 yards between 1990 and ’92.
1992: The Bears finish among the top 10 football teams in the country with a Citrus Bowl win and 10-2 record. It is their most successful season in decades.
1993: Men’s basketball reaches the Sweet 16 of the NCAA Tournament for the first time since 1960. Rugby wins its 10th national title in the last 14 years.
1993-94: Jason Kidd, the most notable Cal basketball player in several decades, leads Cal to the NCAA Sweet 16 in ’93 and again to the NCAA Tournament in ’94.
Trivial Pursuit
No. 7
Who was the last University president to wear a top hat on formal University occasions? Who was his successor and what other University tradition did his successor break?
(Answer on page 456.)

Declaration of Candidacy
If you know at the beginning of a semester that you will have fulfilled graduation requirements by the end of the semester, enter the appropriate code during the first call to the Tele-BEARS registration system. You may also declare your candidacy in person in the Office of the Registrar, 120 Sproul Hall. The period for declaring candidacy is the first five weeks of the semester. Up to the end of the third week, you can declare with no fee, and from the third to the end of the fifth week there is a $5 fee. If for any reason you do not meet the requirements for graduation after declaring your candidacy, you must file a new declaration in the filing period for the subsequent semester in which the degree will be awarded.

If you are an unregistered student at the time you are ready to declare your candidacy, you may go in person to 120 Sproul Hall to fill out the form “Candidate for Bachelor’s Degree” or call 643-6173. The filing deadline is the same as that stated above.

Note: The Office of the Registrar does not backdate degrees.

General Rules and Academic Policies
See also the section “Academic Policies,” beginning on page 77.

Academic Probation
Regulations and procedures governing academic probation vary with each college and school. For specific details, consult your college or school announcement. Students on probation are not entitled to take courses with a passed/not passed option.

Academic Dismissal
Regulations and procedures governing academic dismissal vary with each college and school. For specific details, consult your college or school announcement. If you are dismissed, you may appeal for a hearing by formal petition to the dean of your college or school, but the action of dismissal is normally considered final. If you are dismissed and want to transfer to another college or school at Berkeley, you may petition the dean of that college or school.
Minimum Progress

For undergraduates, normal progress toward a degree requires 30 units of successfully completed course work each year. If you fail to achieve minimum academic progress, you may continue to be enrolled only with the approval of the dean of your college or school. To achieve minimum academic progress, you must have successfully completed a number of units no fewer than 15 times the number of semesters, less one, in which you have been enrolled on the Berkeley campus. Summer Session is not counted as a semester. A course load of 15 units per semester is considered normal. Minimum course load requirements, however, vary by college or school; see the specific college or school announcement for details. If you enroll in a course load of fewer units than the minimum, you will need to have your schedule approved by the dean of your college or school.

Progress Toward a Degree

At the close of each semester, the courses, units, grades, and grade points earned are added onto your cumulative University record. From this record, you may determine your progress toward a degree.

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

Academic Opportunities

Cross-Registration Programs with Other Schools

Berkeley has cross-registration programs with California State University, Hayward; Mills College; San Francisco State University; Sonoma State University; College of Holy Names; J.F. Kennedy University; and Dominican College. With the approval of your adviser and the dean of your school or college, you may register and pay applicable fees at Berkeley and be exempt from tuition and fees at the host campus. You may enroll for only one course per semester at the host campus.

In addition to these established programs, any Berkeley student may attend a class each semester at any one of the campuses of the California state university or the community college systems. Under these programs, students from the other institutions can also attend classes at Berkeley. Students participating in this exchange program may be subject to a $10 administrative fee, depending on the institution. Berkeley currently does not require this fee of students from the other state campuses.

For more information, go to the Office of the Registrar, 120 Sproul Hall, or call Special Registration at 642-1988.

Studying Abroad

A shrinking world and expanding communication technology have made it increasingly important for practitioners in many fields to be able to function in an international context. The Education Abroad Program (EAP) at Berkeley offers a broad spectrum of opportunities for students to gain first-hand experience living in other cultures while progressing toward their bachelor's degrees. EAP offers a diverse array of programs across all the major disciplines in more than 30 countries, and students earn University credit for their participation while enhancing their undergraduate experience.

Options include semester-long, year-long, and summer programs. Some programs do not require foreign language proficiency. Financial aid recipients qualify for financial assistance while abroad on EAP, and the costs of many of the programs are less than those incurred by students who remain on the Berkeley campus. Some scholarship and grant money is available specifically for EAP students, so do not let financial hardship discourage you from considering education abroad among your individual educational goals.

For further information, consult your academic advisers and the Education Abroad adviser in the Berkeley Programs for Study Abroad office, 160 Stephens Hall, 642-1356. E-mail: eapubc@uclink.berkeley.edu.

Studying abroad is about incredible people, exciting places, growing up, and seeing more. For a year, I had an entire continent as a classroom away from Cal. For me, this experience was an amazing package deal.

EAP participant in Leeds, England, 1995-96 (English major)

New Education Abroad programs are continually being developed to respond to student interests and a changing world. In the photo at left, a junior Education Abroad student in Glasgow, Scotland, visits the National Cemetery in Edinburgh.
Any large institution needs a bureaucracy, and every bureaucracy feeds on paper. Ours is particularly hungry. You will have to fill out many forms. Do so carefully and turn them in on time.

When you have to stand in line, bring a book or Walkman, be patient, and stay calm. Remember, you are not alone; if you were, there would be no line.

—Robert Holtermann
College of Letters and Science adviser

Programs Not Sponsored by the University of California
Many Berkeley undergraduates choose to attend overseas study programs sponsored by institutions and organizations other than the University of California. To obtain information about these programs, you should contact the programs directly. Directories of study abroad programs are available at the office of Berkeley Programs for Study Abroad, 160 Stephens Hall, 642-1356. Credit for course work completed may or may not be granted, depending on a review of your final transcript by the Office of the Registrar. Before enrolling in any program, you should consult with the international admission specialists, 110 Sproul Hall, 642-3246, concerning the transferability of the course work for a particular program. Finally, you should consult with a college and major adviser as to the appropriateness of your proposed courses toward degree progress and procedures for readmission.

The Berkeley-Washington Program
The UC Berkeley-Washington Center hosts 15-20 selected undergraduates from all majors during the fall and spring of each year. The academic program allows students to combine course work at the UC Washington Center with field research in an internship that reflects each student’s particular area of interest. All participants will be registered as full-time Berkeley students and will remain eligible for financial aid as long as they meet the minimum number of units.

Applicants must have a minimum 3.0 GPA and have achieved junior status by the start of their semester in Washington. Applicants must take at least one upper-division course on the Berkeley campus in the area they will pursue in Washington.

For more information, contact the UC Berkeley-Washington Program office, 109 Moses Hall, 642-9102. E-mail: ucdc@violet.berkeley.edu

Research and Internships
Berkeley offers many opportunities for you to conduct research projects and engage in internships either as volunteers or paid employees.

Research
In classes in a wide range of disciplines, students work independently or as part of a team on projects ranging from writing preliminary research designs to carrying out sophisticated research projects. Past projects have included working on archaeological digs, collecting and recording family folklore, cataloging museum collections, determining the mechanism for habitat selection of garden snails, assessing the effect of media coverage of the Vietnam war on public sentiment, and collecting information from scholars, managers, and workers in Yugoslavia on management in Yugoslavian firms. For more information, consult your adviser.

The Undergraduate Research Apprentice Program (URAP) allows students to work on a one-on-one basis with faculty engaged in advanced research in the humanities and in social, physical, and biological sciences. Each term faculty submit proposals describing their current research and the qualities they seek in an undergraduate research apprentice. Students who apply and are selected for the program receive close mentoring and the opportunity to work with the ground-breaking faculty who have made Berkeley the world’s premier research institution. For more information, visit the URAP office, 345 Campbell Hall, 642-3795, or visit our Web site at http://www.ls.berkeley.edu/urap/urap.html.

Internships
A wide variety of internships—loosely defined as structured field experience—is available to you on and off campus. The positions may be paid or unpaid, may or may not carry academic credit, and may have educational and career value. Courses with field components occur principally in the 98, 99, 197, 198, and 199 series. Check the course listings in the catalog for specific information. The following offices have listings of numerous internships, both on and off campus: the Student Employment Office and Cooperative Education Internship Program of Career and Graduate School Services, 2111 Bancroft Way; College of Engineering Cooperative Education Program, 306 McLaughlin Hall; Work-Study Program, 212 Sproul Hall; and Cal Corps Public Service Center, 505 Eshleman Hall. Many of the internships are listed online at http://jobs.berkeley.edu. Many individual internship programs in education, business, law, medicine, government, and other categories are available through campus-based offices. For detailed information about these programs, consult The Internship Directory at Career and Graduate School Services, 2111 Bancroft Way. The Internship Directory is also at http://uga.berkeley.edu/cgss/intdir/.

Cooperative Education Program
The Cooperative Education Program is an opportunity for undergraduate and graduate students to integrate classroom study with supervised practical and professional experience in the field. You may work with government, industry, business, or nonprofit organizations in positions related to your academic and career objectives before graduation. These positions are paid and may be full- or part-time. They may last for one semester or as long as two years, depending upon the type of experience you want.

Two offices constitute the campuswide cooperative education program: the Cooperative Education Internship Program and the Engineering Cooperative Education Program. Each program office has separate application procedures and requirements. If interested, you should contact the appropriate program for specific information.
Cooperative Education Internship Program
Liberal arts, sciences, natural resources, environmental design, and business administration majors may apply through this office. Positions are paid, full- or part-time, and last for one semester or as long as two years. For general requirements, contact the Cooperative Education Internship Office, Career and Graduate School Services, 2111 Bancroft Way, 642-1532.

Engineering Cooperative Education Program
All engineering, computer science, and chemical engineering majors may apply through this office. Positions offered are full-time, paid, for a minimum of one semester. For general requirements, contact the Engineering Co-op Office, 306 McLaughlin Hall, 642-6385.

Honors Courses
Berkeley offers some honors courses for highly qualified students, usually in their senior year. A few of these courses are available to lower division students. See your major adviser for information.

Individual Majors
If you have interests that fall outside traditional disciplines, you may design your own major to satisfy your individual academic goals. See an adviser for assistance and more information.

Freshman Seminar Program
The Freshman Seminar Program arose from the conviction that early intellectual contact with faculty members would greatly enhance the freshman experience at Berkeley. Professors from nearly every campus department have joined together to offer an impressive array of seminars. The courses numbered 24 (and in some cases 90) bear 1 unit of credit; they are limited to 15 students, and freshmen are given priority for enrollment. The other lower division seminars, most of which are numbered 39, are limited to 25 freshmen and sophomores. Seminars, which emphasize interaction and discussion, provide a counterpoint to the learning experience in Berkeley's large lecture halls. These seminars also offer lower division students an unprecedented opportunity to explore a wide range of majors and even fields of study usually reserved for graduate students. As you browse through this catalog, you will find lower division seminars sponsored by Letters and Science departments as well as by the professional schools and colleges.

A brochure describing each semester's seminar offerings is mailed to each freshman in time for TeleBEARS registration. For more information regarding the Freshman Seminar Program, please contact the Office of Undergraduate Programs, 333 Campbell Hall, 642-8378 or visit the Web site at http://www.ls.berkeley.edu/ugis/fsp/fsp.html.

Trivial Pursuit
No. 8
If you go to the Sierra Nevada, you might see mountain peaks that were named for Cal professors. Why?
(Answer on page 456.)

An engineering student and her professor work on a research project in precision manufacturing.
Cal Songs
Hail to California
Hail to California, Alma Mater dear
Sing the joyful chorus,
Sound it for and near
Rallying 'round her banner,
We will never fail California Alma Mater,
Hail! Hail! Hail!

Cal Songs
Trivial Pursuit
No. 9
What was the largest crowd ever to see an event in Memorial Stadium?
(Answer on page 456.)

de-cal: Student-Initiated Courses
The de-cal (Democratic Education at Cal) program promotes leadership and encourages students to initiate classes and internships that will help maximize their educational experience at Berkeley. The program offers students opportunities to sample diverse disciplines for 1-4 units of credit on a passed/not passed basis. It also provides a forum for more advanced, focused study. The program encourages academic interests outside of the boundaries of established disciplines and has a long history of progressive, socially responsible courses. As well as mainstream subjects, de-cal courses are ideal for explorations into issues of culture, race, ethnicity, and gender. They may also involve internships aimed at transforming theoretical knowledge into practical experience. For more information, contact the de-cal office at 320 Eshleman Hall, 642-9127.

Advising and Academic Assistance
College and Department Advisers
The College of Letters and Science has a staff of professional advisers who will help you plan your course of study, fulfill requirements, and eventually choose a major. After you have chosen a major, you will be assigned to an adviser who is a faculty member in your major department. Outside the College of Letters and Science, your adviser will most likely be a faculty member.

Student Learning Center
The Student Learning Center, located in 198 Golden Bear Center, 642-7332, offers assistance and noncredit courses in reading, writing, and study skills and preparation for examinations. While priority is given to underrepresented and Educational Opportunity Program students, everyone is welcome.

Student Athletes
Academic Services for Student Athletes, located in 128 Golden Bear Center, offers assistance and noncredit courses in reading, writing, and study skills and preparation for examinations. While priority is given to underrepresented and Educational Opportunity Program students, everyone is welcome.

Honors at Graduation
To be eligible for honors in general scholarship at graduation, you must have completed a minimum of 50 semester units at the University of California, of which a minimum of 43 units must be undertaken for a letter grade; completed a minimum of 30 units at Berkeley; and achieved a grade-point average that ranks you in your school or college in the top 3 percent for highest honors, the next 7 percent for high honors, and the next 10 percent for honors. These criteria are minimal; consult your college or school office.

Honor Societies
Berkeley has a number of honor societies that elect students in recognition of academic excellence. Among these are Phi Beta Kappa, a national honor society; the Prytanean Society, founded in 1900 to honor upper division and graduate women for academic accomplishment and service to the University; the Honors Students Society; Tau Beta Pi, the national honor society for all engineering disciplines and various other engineering honor societies (see the Student Guide to Engineering Societies, available at the Engineers Joint Council office); Alpha Mu Gamma, a national society for students with demonstrated excellence in languages; and individual societies in most language departments. See your adviser for more information.

Prizes
Awards for outstanding ability in some area of creative, scholarly, or athletic achievement are available at Berkeley in two general categories: competitive prizes for creative effort or departmental awards for outstanding scholastic achievement. Consult the Committee on Prizes, 642-3498, for more information.

Academic Scholarships and Awards
The Office of Academic Scholarships and Awards (UGIS) coordinates applications for scholarships and awards based on academic achievement and social or political contribution. The most prestigious of these are the Rhodes, Marshall, and Truman Scholarships.

A database and reference materials are available for undergraduates searching for on- and off-campus scholarship support. Awards are available for students at every class level, but students are urged to begin investigating these resources early in their college careers. For more information, contact Lisa Ohashi, 345 Campbell Hall (643-6929).
Every May, about 6,000 seniors and 3,000 graduate students receive Berkeley degrees in some 60 separate commencement ceremonies sponsored by the various schools, colleges, programs, and departments.
Graduate Education

The main purpose of graduate study is to inspire independence and originality of thought in the pursuit of knowledge. As a graduate student you are expected to achieve mastery of your chosen field through advanced course work, independent study, and research. Graduate education embraces study for all degrees and certificates beyond the bachelor’s degree—principally the master’s and doctor’s degrees. Graduate degrees fall into two broad categories: (1) Professional—degrees awarded by each professional college and school in recognition of a student’s command of a comprehensive body of professional knowledge and the ability to organize and carry out investigation of significant problems in the field. (2) Academic—degrees awarded by the academic departments and some professional schools in recognition of a student’s command of a wide range of related subjects within an academic field, preparation in one or more foreign languages, and ability to pursue original research leading to a significant contribution to a field of study.

These graduate degree programs have been approved by the Graduate Council and the Coordinating Committee on Graduate Affairs, which must approve any new programs. A list of graduate degrees appears later in this section. For complete information on regulations and procedures for graduate students, see the section “Academic Policies,” beginning on page 77.

The Nature of Graduate Education

Graduate study is the pursuit of knowledge through advanced course work and research. Graduate courses demand a capacity for critical analysis and a specialization of research interests not normally appropriate for 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.

You are accorded considerable liberty in your choice of courses, at the discretion of your graduate adviser, as long as you meet the minimum requirements for academic residence. Possession of a bachelor’s degree does not in itself entitle you to enroll in a graduate course. These courses assume adequate preparation at the upper division level in the subject field (a minimum of 12 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). You are therefore encouraged to take upper division courses that will give you the background you need for advanced work; you are not confined to graduate courses.

Graduate courses completed before you attain your bachelor’s degree are not acceptable for unit credit toward an advanced degree. Courses in the 300 and 400 series, which are professional in nature, are not acceptable for unit credit as part of the program for an academic degree. These courses may, however, satisfy certain requirements, such as teaching, research, or technical work, in particular academic programs.

Graduate Advisers

Graduate advisers are appointed by the dean of the Graduate Division for each department, school, or group and are announced before the beginning of the fall semester. Graduate advisers (1) assist students in selecting programs of study; (2) act on petitions for study list changes only; (3) maintain records of all students enrolled under their jurisdiction; and (4) supply information requested by the dean of the Graduate Division about a student’s progress. In addition, the chair of the graduate advisers (1) endorses applications for candidacy for higher degrees and for qualifying examinations; (2) acts on readmission applications and petitions by graduate students; and (3) assists the dean in the enforcement of regulations, particularly those relating to registration, admission to graduate courses, and maintenance of acceptable scholastic performance.

You may also have an individual or major adviser, usually assigned after you are advanced to candidacy for the doctorate, but frequently appointed in the earlier
Selected stages of your training. The individual or major advisors may be the same as the official graduate advisers. You should keep in close touch with your individual adviser and should confer with your official graduate adviser at the beginning of each semester to obtain approval of your program of study.

**Graduate Admissions**

**Applying for Admission**

You must file a completed application for admission, as well as all additional documents specified in the application booklet (including official transcripts from each college-level institution you previously attended) and a nonrefundable application fee of $40, with the Graduate Admissions Office or the department to which you are applying by the established deadlines. Follow the instructions in the application packet, which you should request from the department of your choice.

Many departments admit students only for the fall semester. Information on departmental deadlines and requirements is contained in the application packet.

Each department may set its own deadlines within the following ranges: December 15 - January 5, if you are applying for both the fellowship competition and admission for fall semester (Please note: fellowships are awarded only at the beginning of the fall semester); December 15 - February 10, for admission only for the fall semester; and September 1, for admission to the spring semester. The School of Law admits only for the fall semester; the deadline is February 1.

**Limited Enrollment**

Each graduate program at Berkeley has a maximum enrollment, which limits the number of applicants who may be accepted. Almost invariably, this maximum is smaller than the number of applicants who meet the minimum qualifications for admission. Selection procedures are designed to admit applicants in accordance with their relative merit and promise among those at least minimally qualified. It is to your advantage to inquire early about the possibility of study at Berkeley.

**Admissions Requirements**

The University requires the following academic qualifications: (1) a degree from an accredited institution, comparable to the bachelor's degree offered at Berkeley; (2) sufficient undergraduate training to undertake graduate study in the chosen field; and (3) a satisfactory scholastic average. 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 the results of qualifying examinations. Information on undergraduate requirements for a major field and on graduate programs and requirements is available in the school or departmental announcements and bulletins and in the “Courses and Curricula” section of this catalog.

**Graduate Record Examination**

Applicants for graduate admission (with certain exceptions listed below) are required to take the General Test of the Graduate Record Examination (GRE) and to have their scores on this examination reported by the Educational Testing Service. Although current test scores are preferred, reports up to five years old—but not older—will be accepted.

If you are applying to the UCB-UCSF Joint Medical Program, you are not required to take the GRE but must take the MCAT (Medical College Admission Test).

If you are applying to the Haas School of Business M.B.A. Program, you must take the Graduate Management Admission Test (GMAT) in place of the Graduate Record Examination.

If you are applying to the School of Law for the J.D. degree, you must take the Law School Admission Test (LSAT) rather than the GRE.
Berkeley's Nobel Tradition

1939: Ernest Lawrence (now deceased), professor of physics, wins Nobel Prize for physics.

1945: John Northrop (now deceased), professor of bacteriology and biophysics, wins Nobel Prize for chemistry.

1946: Wendell Stanley (now deceased), professor of chemistry, wins Nobel Prize for chemistry.

1949: William Giauque (now deceased), professor of chemistry, wins Nobel Prize for chemistry.

1951: Edwin McMillan (now deceased) and Glenn Seaborg, professors of chemistry, win Nobel Prize for chemistry.

1959: Emilio Segré (now deceased) and Owen Chamberlain, professors of physics, win Nobel Prize for physics.


1961: Melvin Calvin (now deceased), professor of chemistry, emeritus, wins Nobel Prize for chemistry.

1964: Charles Townes, professor of physics, wins Nobel Prize for physics.

1968: Luis Alvarez (now deceased), professor of physics, wins Nobel Prize for physics.

(continued on next page)

Teaching Credential applicants (Single Subject only) are not required to take the GRE. However, applicants for the M.A.T. degree must fulfill the GRE requirement.

The GRE is offered in two formats: The traditional paper-and-pencil test and the computer-based test. Either format is acceptable. If you choose the paper-and-pencil test, registration must be received about four weeks before the test date. Computer-based tests may be scheduled by telephone.

You may obtain applications for the GRE and GMAT from the Educational Testing Service, Box 6000, Princeton, NJ 08541-6000, from its western office at P.O. Box 23470, Oakland, CA 94623-0470, or on the World Wide Web at http://www.gre.org.

The GRE Board provides a fee waiver service for students. To be eligible, you must be: 1) a United States citizen or resident alien; 2) a senior receiving financial aid through an undergraduate college in the United States, Puerto Rico, or U.S. Territories; and 3) a student who meets the GRE Board financial-need guidelines. Consult your undergraduate financial aid office for information.

International Applicants

Applicants who come from a country in which the official language is English or who have studied for one year or more in schools or universities in which English is the language of instruction must take the General Test of the Graduate Record Examination. In general, others applying from countries outside the United States need not submit GRE scores unless their major departments so require. A list of departments or groups that require the GRE of all their applicants is included in the application packet.

International applicants must fulfill all previously stated admissions requirements and have an excellent command of English before beginning graduate study at Berkeley; students cannot be admitted to graduate standing to learn English. If you are applying from a country in which English is not the official language, you must take the Test of English as a Foreign Language (TOEFL) and have the results sent directly to the Graduate Admissions Office. The test is administered six times a year, and you should register as soon as possible by writing either the TOEFL agent in your country or TOEFL/TSE, P.O. Box 6154, Princeton, NJ 08541-6154. You may also register on the World Wide Web at http://www.toefl.org.

If you have previously registered and withdrawn and want to re-enroll, you must file an Application for Re-admission, obtainable from Graduate Degrees and Petitions, Graduate Division, 302 Sproul Hall, and pay a nontransferable, nonrefundable re-admission fee of $40. This fee must accompany the Application for Re-admission when first submitted, or the application will not be reviewed. Approval of re-admission is not automatic. The Graduate Division and your department, school, or group will review your petition and academic record and notify you of their decision.

Special Circumstances

Readmission

If you would like to serve as a graduate student instructor, you should take the Test of Spoken English (TSE) in your country or the Speaking Proficiency English Assessment Kit (SPEAK) at Berkeley as soon as you arrive. For information on registering to take the TSE, contact the TOEFL/TSE agent in your country or at the address given above. International students with bachelor's degrees from the United States or from a country in which the language of instruction is English and students who will be teaching in their native language are exempt from the test requirement. A list of exempted countries is available from the Graduate Student Instructor Teaching and Resource Center, University of California, Berkeley, 301 Sproul Hall #5900, Berkeley, CA 94720-5900. The TSE is not a requirement for admission.
Duplication of Higher Degrees
Normally, duplication of degrees is not permitted. Your department may petition the dean of the Graduate Division for an exception to this policy if the degree you want is in a field of study distinctly different from the field in which you attained your original degree. A professional degree is not regarded as duplication of an academic degree.

On the recommendation of the graduate adviser and with the approval of the dean of the Graduate Division, you may, however, be permitted to earn a second master’s degree in the same subject as that of the first master’s (or in a closely allied subject), if you are enrolled in a doctoral program at Berkeley in that subject and if that particular doctoral program requires a master’s degree from Berkeley.

Reactivation of Application
The Graduate Division keeps application materials on file for two years. If you filed an application within the past two years but did not complete the application process, were denied admission, or were admitted but did not register, you may reactivate your previous file by submitting a new application form by the established deadline for the semester in question.

The first reactivation is free. Thereafter, the current application fee is required. A request for reconsideration in another major field for the same semester does not constitute a reactivation of application.

Notification of Action on Admission
A written notice from the dean of the Graduate Division is the only valid proof of admission. Admission to graduate study is limited by the number of places available in the various colleges, schools, and departments of Berkeley. If you have applied for admission and fellowship consideration, you should be notified by April 1 of the action on your application.

If you have applied for admission only, you will be advised as soon as possible after a decision has been reached. Normally, however, acceptance letters for admission only will not be issued until after March for the fall semester.

How Tele-BEARS Works
To ensure the fairest possible distribution of courses to the student body, enrollment in classes is spread over two phases and an adjustment period. Phase I, starting toward the end of the previous semester, allows you to enroll in a maximum of 12 units plus one physical education activity course. In Phase II, starting immediately after Phase I, you may complete your enrollment by enrolling in additional courses if necessary. You may then add and drop courses during the adjustment period, which starts one week before instruction and extends through the first three weeks of instruction.

Access to Tele-BEARS is regulated by pre-assigned appointments which are spread throughout each phase period. For security purposes, you are assigned a unique Personal Identification Number (PIN) which must be entered after your Student ID number in order to use Tele-BEARS.

To enroll and register through Tele-BEARS, follow these steps:

Receive Your Registration Form
A Tele-BEARS registration form indicating your PIN and appointment times will be mailed to you by the Office of the Registrar.* If you require academic advising, you also will be required to obtain an Adviser Code (AC) from your graduate adviser. The AC must be entered when you first access Tele-BEARS each semester. If you will be a readmitted student, you will also be mailed a Schedule of Classes, which lists the meeting times and locations of all courses to be given at Berkeley for the semester.

Enroll in Classes
With the Schedule of Classes and the General Catalog, you can determine a class schedule. Once you have selected your classes and have obtained your AC from your major adviser (if required), you can use Tele-BEARS to enroll.

Pay Registration Fees
A monthly billing statement indicating all University fees due will be mailed to you by the Loans and Receivables Office. You may pay your fees in full or in five installments on the Deferred Payment Plan. Fee payment (either in full or the first installment) is due on July 15 for the fall semester and December 15 for the spring semester.

The Deferred Payment Plan
You may pay your registration fees in five installments if you wish. A nonrefundable processing fee will be charged to your first installment. Your billing state-
ment will indicate the amount due for the first payment; subsequent statements for the remaining payments will be mailed to your local address on file with the Office of the Registrar. For full information on the Deferred Payment Plan, read the billing statement or call the Loans and Receivables Office at 642-3190.

Obtain Your Confirmed Class Schedule
At the end of Phase II, the Office of the Registrar will produce a Confirmed Class Schedule indicating all classes for which you have enrolled through Tele-BEARS. You must obtain your schedule from your major department office.

Info-BEARS
Info-BEARS is Berkeley’s information retrieval system and an adjunct to Tele-BEARS. With Info-BEARS, you can hear your final grades for the previous term, the status of your financial aid application, your current class schedule, enrollment restrictions for a particular course, and much more. Info-BEARS is available Monday through Friday from 7 a.m. to 10 p.m., on Saturday from 7 a.m. to 7 p.m., and on Sunday from noon to 6 p.m. The phone number is 642-9400. For more information, see the Schedule of Classes.

Bear Facts
Bear Facts is an online computer system that provides information regarding your registration, grades, financial aid, billing, class schedule, and more. Unlike Info-BEARS (which provides similar information via telephone), Bear Facts is visual—the information is displayed directly on a computer screen. You can access Bear Facts from a number of sites on campus, or you can use it on your Macintosh or PC at home. For more information, including instructions on downloading the software, see the Office of the Registrar’s Web site at http://registrar.berkeley.edu:4202.

Statement of Intention to Register
The admission letter to new (including reactivating) graduate students contains a Statement of Intention to Register that must be filled out and returned to the Graduate Admissions Office. Only the return of the form to the Graduate Admissions Office indicating an intention to register will reserve the registration slot allocated to you. If you want to retain a record of the return of your Statement of Intention to Register, you should send it by certified or registered mail. If you do not want to accept the offer of admission, you must register with the Office of the Registrar each semester until you complete all requirements for the degree, unless you have permission from the dean of the Graduate Division to withdraw. You can satisfy the requirement for full-time continuous registration by attending both semesters of an academic year. You must be registered or pay the filing fee, whichever is applicable, for the semester in which your degree is conferred. If you hold a nonimmigrant visa, you must be registered for both semesters of each academic year unless you have special permission from the Immigration Service to do otherwise. Consult the International Student Adviser for further information.

In summary, you must register in any semester in which you are enrolled in formal courses of instruction or are making any use of University facilities, including access to the faculty, except for uses accorded the general public.

If your studies or research requires absence from California for the semester, you must file a petition requesting absence and a reduction of the University registration fee with Graduate Degrees and Petitions, third floor Sproul Hall.

Special Information for New Graduate Students
If you will be a new graduate student, you will not use Tele-BEARS until the adjustment period, starting one week before the beginning of instruction. You must obtain your registration form from your major department and meet with your graduate adviser to approve your class schedule and obtain your Adviser Code.

Cancellation of Registration
Students who have registered and decide before classes begin not to attend Berkeley may cancel by filing the appropriate form. For further information see the section “Academic Policies,” beginning on page 77.

Class Schedule and Unit Load
Courses are classified as lower division (numbered 1 through 99); upper division (100-199); graduate (200-299); professional, for teachers or prospective teachers (300-399); special study for preparation for the master’s exam (601); and special study for preparation for the doctoral qualifying exam (602). Lower division courses are not counted as part of a full program of study leading to a higher degree. You must be enrolled
Recent Ratings of Graduate and Professional Schools at U.S. Universities


Berkeley has more top-ranked doctoral programs than any university in the nation, according to a September 1995 report by the National Research Council (NRC). Faculty peers from around the country, using such criteria as quality of research, publications, and teaching, ranked 35 of 36 Berkeley Ph.D. programs in the top 10 of their fields. The NCR study took four years to complete and is considered the most comprehensive of all reports on graduate education. Below are Berkeley’s rankings.

### Anthropology
1. Michigan
2. Chicago
3. Berkeley
4. Harvard
5. Arizona
6. Penn
7. Stanford
8. Yale
9. UCLA
10. UC San Diego

### Cell & Developmental Biology
1. MIT
2. Rockefeller
3. UCSD
4. Caltech
5. Harvard
6. Stanford
7. UC San Diego
8. Washington
9. Washington University
10. Berkeley

### Comparative Literature
1. Yale
2. Duke
3. Columbia
4. Harvard
5. Princeton
6. Cornell
7. Johns Hopkins
8. UC Irvine
9. Stanford
10. Berkeley

### Chemical Engineering
1. Minnesota
2. MIT
3. Berkeley
4. Wisconsin
5. Illinois
6. Caltech
7. Stanford
8. Delaware
9. Princeton
10. Texas (Austin)

### Computer Science
1. Stanford
2. MIT
3. Berkeley
4. Carnegie Mellon
5. Cornell
6. Princeton
7. Texas (Austin)
8. Illinois
9. Washington
10. Berkeley

### Ecology, Evolution & Behavior
1. Stanford
2. Chicago
3. Duke
4. Cornell
5. UC Davis
6. Princeton
7. Washington
8. Berkeley
9. Wisconsin
10. Stony Brook

### Economics
1. Chicago
2. Harvard
3. MIT
4. Stanford
5. Princeton
6. Yale
7. Berkeley
8. Penn
9. Northwestern
10. Minnesota

### English
1. Berkeley
2. Yale
3. Harvard
4. Virginia
5. Duke
6. Stanford
7. Cornell
8. Penn
9. Columbia
10. Chicago

### History
1. Yale
2. Berkeley
3. Princeton
4. Harvard
5. Columbia
6. UCLA
7. Stanford
8. Chicago
9. Johns Hopkins
10. Wisconsin

### Anthropology
1. Caltech
2. Princeton
3. Berkeley
4. Harvard
5. Chicago
6. UC Santa Cruz
7. Arizona
8. MIT
9. Cornell
10. Texas (Austin)

### Biochemistry & Molecular Biology
1. UCSF
2. MIT
3. Stanford
4. Berkeley
5. Harvard
6. Yale
7. Caltech
8. Wisconsin
9. UC San Diego
10. Johns Hopkins
11. Columbia

### Cell & Developmental Biology
1. MIT
2. Rockefeller
3. UCSD
4. Caltech
5. Harvard
6. Stanford
7. UC San Diego
8. Washington
9. Washington University
10. Berkeley

### Comparative Literature
1. Yale
2. Duke
3. Columbia
4. Harvard
5. Princeton
6. Cornell
7. Johns Hopkins
8. UC Irvine
9. Stanford
10. Berkeley

### Chemical Engineering
1. Minnesota
2. MIT
3. Berkeley
4. Wisconsin
5. Illinois
6. Caltech
7. Stanford
8. Delaware
9. Princeton
10. Texas (Austin)

### Computer Science
1. Stanford
2. MIT
3. Berkeley
4. Carnegie Mellon
5. Cornell
6. Princeton
7. Texas (Austin)
8. Illinois
9. Washington
10. Wisconsin

### Ecology, Evolution & Behavior
1. Stanford
2. Chicago
3. Duke
4. Cornell
5. UC Davis
6. Princeton
7. Washington
8. Berkeley
9. Wisconsin
10. Stony Brook

### Electrical Engineering
1. Stanford
2. MIT
3. Illinois
4. Berkeley
5. Caltech
6. Michigan
7. Cornell
8. Purdue
9. Princeton
10. USC
10. UCLA

### German
1. Berkeley
2. Princeton
3. Cornell
4. Harvard
5. Yale
6. Stanford
7. Washington University
8. Virginia
9. Johns Hopkins
10. Wisconsin

### History
1. Yale
2. Berkeley
3. Princeton
4. Harvard
5. Columbia
6. UCLA
7. Stanford
8. Chicago
9. Johns Hopkins
10. Wisconsin

### Industrial Engineering
1. Georgia Tech
2. Berkeley
3. Purdue
4. Michigan
5. Texas A&M
6. Northwestern
7. Stanford
8. Virginia Poly
9. Penn State
10. Wisconsin

### Linguistics
1. MIT
2. Stanford
3. UCLA
4. UMass (Amherst)
5. Penn
6. Berkeley
7. Chicago
8. Ohio State
9. Cornell
10. UC Santa Cruz

### Mathematics
1. Berkeley
2. Princeton
3. Cornell
4. Harvard
5. Yale
6. Stanford
7. Yale
8. NYU
9. Michigan
10. Columbia

(continued on next page)
Graduate Education
1995-96
Full-time, ladder-rank: 1,789
Male: 78%
Female: 22%
Ethnic minority: 15%
Tenured: 84%
Nobel laureates: 7
National Academy of Sciences: 117
National Academy of Engineering: 69
American Academy of Arts and Sciences: 188
Guggenheim fellows: 129
MacArthur fellows: 14
Fulbright scholars: 102
Pulitzer Prize winners: 3
Alfred P. Sloan faculty fellowships, 1984-96: 42
National Medal of Science, 1982-96: 13
Endowed chairs: 190

Berkeley Faculty
1995-96

Mechanical Engineering
1. Stanford
2. MIT
3. Berkeley
4. Caltech
5. Michigan
6. Princeton
7. Cornell
8. Minnesota
9. Illinois
10. UC San Diego

Female: 22%
Ethnic minority: 15%
Tenured: 84%
Nobel laureates: 7
National Academy of Sciences: 117
National Academy of Engineering: 69
American Academy of Arts and Sciences: 188
Guggenheim fellows: 129
MacArthur fellows: 14
Fulbright scholars: 102
Pulitzer Prize winners: 3
Alfred P. Sloan faculty fellowships, 1984-96: 42
National Medal of Science, 1982-96: 13
Endowed chairs: 190

Graduate Student Ethnicity 1995
Asian American: 14%
Caucasian: 56.4%
Hispanic: 6.3%
African American: 4.1%
Native American: 7%
Filipino: 1.2%
Other: 4%
International: 13.3%

Music
1. Harvard
2. Chicago
3. Berkeley
4. CUNY
5. Yale
6. Princeton
7. Penn
8. Rochester
9. Michigan
10. Illinois

Politics
1. Stanford
2. Berkeley
3. Yale
4. UCLA
5. Illinois
6. Harvard
7. Princeton
8. UCLA
9. UC San Diego
10. Wisconsin

Political Science
1. Harvard
2. Berkeley
3. Yale
4. UCLA
5. Illinois
6. Harvard
7. Princeton
8. UCLA
9. UC San Diego
10. Wisconsin

Ecology
1. MIT
2. UCSF
3. Harvard
4. Caltech
5. Stanford
6. UC San Diego
7. Wisconsin
8. Yale
9. Johns Hopkins
10. Berkeley

Psychology
1. Stanford
2. Michigan
3. Yale
4. UCLA
5. Illinois
6. Harvard
7. Minnesota
8. Penn
9. Berkeley
10. UC San Diego

Geography
1. MIT
2. UCSF
3. Harvard
4. Caltech
5. Stanford
6. UC San Diego
7. Wisconsin
8. Yale
9. Johns Hopkins
10. Berkeley

Neurosciences
1. UC San Diego
2. Yale
3. Harvard
4. UCSF
5. Stanford
6. Columbia
7. Johns Hopkins
8. Washington Univ.
9. Berkeley
10. Caltech
11. Penn

Sociology
1. Chicago
2. Wisconsin
3. Berkeley
4. Michigan
5. UCLA
6. North Carolina
7. Harvard
8. Stanford
9. Northwestern
10. Washington

Philosophy
1. Princeton
2. Pittsburgh
3. Harvard
4. Berkeley
5. Pittsburgh (Hist/Phil of Sci)
6. UCLA
7. Stanford
8. Michigan
9. Cornell
10. MIT

Statistics/Biostatistics
1. Berkeley (Stat)
2. Stanford
3. Berkeley (Biostat)
4. Cornell
5. Chicago
6. Washington (Biostat)
7. Harvard
8. Wisconsin
9. Washington (Stat)
10. Purdue

Physics
1. Harvard
2. Princeton
3. Berkeley
4. MIT
5. Caltech
6. Cornell
7. Chicago

Professional Schools

In 1996, US News & World Report published results of a study ranking professional programs at U.S. universities on the basis of reputation plus such factors as median starting salary after graduation and percentages of graduates employed several months after graduation. Below are rankings of the schools and programs that Berkeley offers:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Architecture</td>
<td></td>
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<tr>
<td>1. Harvard</td>
<td></td>
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<tr>
<td>2. Princeton</td>
<td></td>
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<tr>
<td>3. Columbia, Yale</td>
<td></td>
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<tr>
<td>4. MIT</td>
<td></td>
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<tr>
<td>5. Chicago</td>
<td></td>
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<tr>
<td>6. Dartmouth</td>
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in 12 units in 200 series (or above) to be considered a full-time student. (For information on courses in the 600 series, see page 79.) Graduate student instructors and graduate student researchers must normally carry a minimum of 8 units in the 100, 200, and 300 series. The substitution of lower division units taken to prepare for departmental requirements in languages, mathematics, or statistics for upper division units is permitted. Fellowship holders and international students on non-immigrant visas must carry a full program of 12 units in upper division and/or graduate courses, although individual study in the form of language preparation, comprehensive and qualifying examination preparation, etc., for the Ph.D. degree is taken into account. In these cases reduced unit loads are accepted as full programs with the consent of the graduate adviser and dean of the Graduate Division.

**Withdrawal**

If you want to withdraw from Berkeley at the end of a semester or while the semester is in progress, you must file a formal withdrawal. For further information, see the section “Academic Policies,” beginning on page 77.

### Graduate Degrees and Certificates

Academic degrees are the M.A., M.S., M.F.A., and Ph.D. All other degrees and certificates are professional. The J.D. in Law is the basic law degree. It is a graduate degree, and if interested you should apply directly to the School of Law.

**Graduate degrees and certificates are listed below:**

**African American Studies, Ph.D.**

**Agricultural and Environmental Chemistry, M.S., Ph.D.**

**Agricultural and Resource Economics, M.S., Ph.D.**

**Anthropology, M.A., Ph.D.**

**Applied Mathematics, Ph.D.**

**Applied Science and Technology, M.S., Ph.D.**

**Architecture, M.S., M.Arch., Ph.D.**

**Art, M.F.A.**

**Asian Studies, M.A., Ph.D. M.A. program emphases:**

- East Asian, Southeast Asian, South Asian
- Astronomy, M.A., Ph.D.

**Bioengineering, M.S., Ph.D.** (Joint program with San Francisco campus)

**Biophysics, M.A., Ph.D.**

**Biostatistics, M.A., Ph.D.**

**Buddhist Studies, Ph.D.**

**Business Administration, M.B.A., M.S., Ph.D.**

**Chemical Engineering, M.S., Ph.D.**

**Chemistry, M.S., Ph.D.**

**City and Regional Planning, M.C.P., Ph.D.**

**Classical Archaeology, M.A., Ph.D.**

**Classics, M.A., Ph.D. M.A. program emphases:**

- Greek
- Latin

**Comparative Biochemistry, M.A., Ph.D.**

**Comparative Literature, M.A., Ph.D.**

**Computer Science, M.S., Ph.D.**

**Demography, M.A., Ph.D.**

**Design (Visual), M.A.**

**Dramatic Art, M.A., Ph.D.**

**East Asian Languages:**

- Altaic Language, M.A.
- Chinese Language, M.A., Ph.D.
- Japanese Language, M.A., Ph.D.

**Economics, M.A., Ph.D.**

**Education, Teaching Credential, M.A., M.A.T., Ph.D., Ed.D.**

**Endocrinology, M.A., Ph.D.**

**Energy and Resources, M.A., Ph.D.**

**Engineering and Engineering Science, M.S., M.Eng., Ph.D., D.Eng. Majors for Engineering and Engineering Science:**

- Civil and Environmental Engineering
- Electrical Engineering and Computer Sciences
- Industrial Engineering and Operations Research
- Materials Science and Mineral Engineering
- Mechanical Engineering
- Naval Architecture and Offshore Engineering
- Nuclear Engineering
- English, M.A., Ph.D.

**Entomology (see Environmental Science, Policy, and Management)**

**Environmental Health Sciences, M.S., Ph.D.**

**Environmental Planning, Ph.D.**

**Environmental Science, Policy, and Management, M.S., Ph.D.**

**Epidemiology, M.S., Ph.D.**

**Ethnic Studies, M.A., Ph.D.**

**Folklore, M.A.**

**Forestry (see Environmental Science, Policy, and Management)**

**French, M.A., Ph.D.**

**Geography, M.A., Ph.D.**

**Geology, M.S., Ph.D.**

**Geophysics, M.A., Ph.D.**

**German, M.A., Ph.D.**

**Greek, M.A.**

**Health and Medical Sciences, M.S. Program emphases:**

- Genetic Counseling, UCB-UCSF Joint Medical Program

**Health Services and Policy Analysis, Ph.D.**

**Hispanic Languages and Literatures, M.A., Ph.D.**

**History, M.A., Ph.D.**

**History of Art, M.A., Ph.D.**

**Human Biodynamics, M.A., Ph.D.**

**Infectious Disease and Immunity, M.A., Ph.D.**

**Information Management and Systems, M.I.M.S., Ph.D.**

**Integrative Biology, M.A., Ph.D.**

**Italian Studies, M.A., Ph.D.**

**Japanese, M.A., Ph.D.**

**Korean, M.A.**

**Linguistics, M.A., Ph.D.**

**Library and Information Science, M.S., Ph.D.**

**Mathematics, M.A., Ph.D.**

**Mechanical Engineering, M.S., Ph.D.**

**Medical Microbiology, M.S., Ph.D.**

**Medical Physics, M.S., Ph.D.**

**Microbiology, M.S., Ph.D.**

**Molecular Biology, M.S., Ph.D.**

**Molecular Genetics, M.S., Ph.D.**

**Molecular Neuroscience, M.S., Ph.D.**

**Molecular Pharmacology, M.S., Ph.D.**

**Molecular Toxicology, M.S., Ph.D.**

**Music, M.M., M.A., M.F.A., Ph.D.**

**Natural Resources, M.A., Ph.D.**

**Nutrition, M.S., Ph.D.**

**Oceanography, M.S., Ph.D.**

**Pacific Historical Studies, M.A., Ph.D.**

**Paleontology, M.S., Ph.D.**

**Philosophy, M.A., Ph.D.**

**Physics, M.S., Ph.D.**

**Political Science, M.A., Ph.D.**

**Psychiatry, M.A., Ph.D.**

**Public Health, M.P.H., M.P.H.**

**Public Policy, M.A., Ph.D.**

**Russian, M.A., Ph.D.**

**Sociology, M.A., Ph.D.**

**Southwest Asian Languages:**

- Arabic Language, M.A., Ph.D.; Persian Language, M.A., Ph.D.

**Spanish, M.A., Ph.D.**

**Statistics, M.S., Ph.D.**

**Sustainable Systems, M.S., Ph.D.**

**Theater, M.F.A.**

**Theater Studies, M.A., Ph.D.**

**Television and Film, M.A., M.F.A.**

**Tibetan Studies, M.A., Ph.D.**

**Urban and Regional Planning, M.P.A., M.P.P., Ph.D.**

**Venezuela, M.A., Ph.D.**

**Virology, M.S., Ph.D.**

**Wine Science, M.S., Ph.D.**

**Women's Studies:**

- Feminist Issues, M.A., Ph.D.
- Gender Issues, M.A., Ph.D.
- History of Women, M.A., Ph.D.
- Race and Gender Relations, M.A., Ph.D.
- Sexualities, M.A., Ph.D.

*Students are not admitted to work for the M.A./M.S. degree, although it may be awarded to students pursuing work toward the Ph.D. degree after fulfillment of the appropriate M.A./M.S. requirements.

†Indicates established interdisciplinary group or field.
Note: The text on the page is not fully legible due to image quality, but it appears to be discussing notable alumni from UCLA and the programs offered by the School of Optometry. The text includes names of alumni, departments, and degree programs offered by the university. The text is cut off at the bottom and continues on the next page.
Graduate Theological Union

There are two kinds of programs that include the faculties of the Graduate Theological Union (GTU) in Berkeley: the “casual program” and the joint Ph.D. programs.

The casual program is open to all students in the GTU community and all graduate students at Berkeley. This program allows you to register on one campus and take courses on the other, subject to the appropriate academic approvals. You may obtain applications and deadlines from Graduate Degrees and Petitions, 302 Sproul Hall.

The Joint Doctoral Program is offered in two areas and is open only to students who intend to work toward the Ph.D. degree. You must be admitted to both the Graduate Theological Union and the University, because the degrees are conferred jointly by both institutions.

To apply to Near Eastern Religions, you must first have an M.A. (or its equivalent) in Near Eastern Studies or in a related field and must have at least two ancient languages suitable to the proposed program.

To apply to Jewish Studies, you must have an undergraduate preparation that includes at least six university-level courses in Jewish studies, at least two years of university-level Hebrew language courses or the equivalent, minimal proficiency in another foreign language, and an undergraduate major in Jewish studies, history, comparative literature, sociology, philosophy, anthropology, political science, religious studies, or Near Eastern Studies.

You may use the extensive library holdings of the GTU and supplement your program with selected courses in Palestinian archaeology, Biblical studies, Semitic epigraphy, and philology. For information about the programs, a catalog, and application forms, write to: Graduate Theological Union, 2400 Ridge Road, Berkeley, CA 94709.

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 Berkeley campus and San Francisco State University. The program is interdisciplinary, including clinical experience as well as in-depth preparation in the behavioral sciences and in statistics and research methods. For application material and additional information, write to: Special Education, c/o School of Education, University of California, Berkeley, or Department of Education, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132.

Concurrent Degree Programs

Concurrent degree programs provide a broad integrated curriculum between two disciplines. You should direct inquiries to the departments or schools involved.

Architecture, M.Arch.—Civil and Environmental Engineering, M.S.
Architecture, M.Arch.—Landscape Architecture, M.L.A.
Asian Studies, M.A.—Law, J.D.
Business Administration, M.B.A.—Asian Studies, M.A.
Business Administration, M.B.A.—Law, J.D.
(Berkeley)
Business Administration, M.B.A.—Law, J.D. (Davis)
Business Administration, M.B.A.—Law, J.D. (Hastings)
Business Administration, M.B.A.—Public Health, M.P.H.
City and Regional Planning, M.C.P.—Civil and Environmental Engineering, M.S.
City and Regional Planning, M.C.P.—Law, J.D. (Berkeley)
City and Regional Planning, M.C.P.—Law, J.D. (Hastings)
City and Regional Planning, M.C.P.—Public Health, M.P.H.
Economics, M.A.—Law, J.D.
Journalism, M.J.—Asian Studies, M.A.
Journalism, M.J.—Latin American Studies, M.A.
Journalism, M.J.—Law, J.D.
Landscape Architecture, M.L.A.—City and Regional Planning, M.C.P.
Public Health, M.P.H.—M.D. (School of Medicine, San Francisco)
Public Policy, M.P.P.—Engineering, M.S.
Public Policy, M.P.P.—Law, J.D.
Public Policy, M.P.P.—Public Health, M.P.H.
Social Welfare, M.S.W.—Law, J.D.

International and Area Studies

The Graduate Group in International and Area Studies (IAS) offers M.A. degrees in conjunction with graduate degree programs in professional schools and Ph.D. programs in the social science disciplines. Only current graduate students may apply. No freestanding degree in IAS is offered.

Designated Emphasis

A graduate group has been formed to offer a designated emphasis on women, gender, and sexuality. The designated emphasis is designed to complement Ph.D. programs in the humanities and social sciences and provides opportunities for interdisciplinary study with faculty from other departments. For information, contact the Department of Women’s Studies, 2241 College Ave., Berkeley, CA 94720.

Teaching Credentials

Courses leading to the multiple subject or single subject teaching credentials are offered on the Berkeley campus. For details, please consult the Announcement of the School of Education.
Requirements for Graduate Degrees

The Master's Degree

Berkeley offers instruction leading to both academic and professional degrees. For specific regulations governing the professional master's degrees, see the individual announcements of the colleges and schools. This section will deal primarily with the academic master's degree.

Residence Requirement

A minimum of two semesters of academic residence is required for the master's degree. Academic residence is defined as enrollment in at least 4 units in 100-200 series courses. Specific subject requirements and performance levels are set by the schools, departments, and groups.

Transfer of Credit from Other Institutions

To request a transfer of units, ask your graduate adviser to make a formal request to the dean of the Graduate Division specifying the units and courses involved. Your credits may be transferable if (1) the units involved are equivalent to work normally offered within your current program of study, (2) the grade recorded was at least a B, and (3) you have a superior scholastic record at both your original institution and at Berkeley. No more than 4 semester or 6 quarter units are transferable, and the work must have been completed previously in graduate status at an institution of high standing. The units transferred cannot be used to reduce the minimum required in the 200 series courses or the minimum residence requirement.

Work that formed part of the program for a master's degree previously conferred (either at the University of California or elsewhere) may not be applied toward a current degree program.

Credit for graduate work that you completed on other campuses of the University of California may be granted in excess of 6 quarter units or 4 semester units. Requests are handled on an individual basis.

Concurrent Enrollment—University Extension

Courses taken concurrently through University Extension but held on the Berkeley campus under the instruction of a regular member of the Berkeley faculty are generally not applicable toward a Berkeley master's degree. These courses are intended to provide Extension students with an opportunity to take courses that would not ordinarily be available to them. Concurrent enrollment cannot replace normal registration by Berkeley graduate students, nor may it be used to accumulate credit toward a Berkeley degree by an individual not formally admitted to graduate standing at Berkeley. An exception may be made for you only if there is clear evidence that you were concurrently enrolled through Extension while in graduate standing at another institution and with the intent of applying the units earned toward a graduate degree at that institution. Exceptions must be fully justified by the graduate adviser and will require special approval by the dean of the Graduate Division.

Amount and Distribution of Work

If you work toward an academic master's degree on the Berkeley campus, you will pursue one of two plans, as determined by your school, department, or group. (Units may adopt either or both plans and will, in the latter case, designate which plan you are to follow.)

Plan I requires at least 20 semester units of upper division and graduate courses and a thesis. At least 8 of these units must be in graduate courses (200 series) in your major subject. Course units are not granted for the thesis.

Plan II requires at least 24 semester units of upper division and graduate courses, followed by a comprehensive final examination administered by your school, department, or group. At least 12 of the units must be in graduate courses in your major subject.

Your graduate adviser will guide you regarding distribution of course work among departments. Please note that departments, schools, and groups have performance standards that are higher than the minimum B average required by the Graduate Division. Further requirements are specified by the major department.

Advancement to Candidacy

When you complete the requirements for your degree, you will not automatically be admitted to candidacy for the master's degree; you must make a formal application to the dean of the Graduate Division no later than the fifth week of the semester in which your degree will be awarded. The application must be approved by the chair of graduate advisers in your major school, department, or group and must include a precise statement of the studies on which the application is based. If you are to submit a thesis, however, you should consult your adviser as early as possible about advancement to candidacy so that the appropriate committee can be formed. You will not receive the degree unless you have been advanced to candidacy.

The Master's Thesis

If you are following Plan I, described above, you must submit a thesis, double-spaced on approved paper, with a minimum left-hand margin of 1 1/2 inches. Consult the Degrees staff in the Graduate Division for required brands of paper.

The thesis must be unbound and without perforations. The type must be adequate for photographic reproduction. Following approval by your thesis committee, two copies are filed with the Graduate Division. Further information regarding the organization and format of the thesis is available from Graduate Degrees and Petitions, 302 Sproul Hall, or visit the Web site at http://www.grad.berkeley.edu/grad/.
The thesis constitutes a report, in as brief a form as possible, of results obtained in an original investigation of a problem. The problem in question need only be of limited scope; however, the thesis should be comparable in style, organization, and depth of understanding to investigations of greater scope, such as the dissertations of doctoral candidates.

You must submit your thesis to a committee of three members of the faculty appointed by the dean of the Graduate Division. One member of the committee should be chosen from a department other than that of your major subject. You are required to confer with all members of your committee before beginning your thesis; since the committee is not appointed until you are advanced to candidacy, you should not begin thesis work before advancement in order to avoid extensive revisions. You are responsible for placing the completed thesis in the hands of your committee members.

Three years is the normal time period allowed for completion of the thesis. Candidacy for the master’s degree will lapse automatically at the end of that time. You can be reinstated, however, upon the recommendation of the graduate adviser to the dean at the time your thesis committee members have approved a final draft of your thesis.

If all three members of your committee approve the thesis, they sign your thesis title page. You then file two copies of the thesis with the Graduate Division for later deposit in the University library. If any member of your committee doubts the acceptability of the thesis, the committee chair convenes the committee to discuss it. If the committee reaches agreement on its acceptability, the thesis is signed and filed as described above.

If the committee continues to disagree, the thesis is sent to the dean of the Graduate Division with a brief statement of each committee member’s opinion. If all members of the committee reject the thesis, it is sent to the dean with a statement to that effect by the committee chair. In all cases of rejection or split vote, the Administrative Committee of the Graduate Council makes the final decision.

The Doctoral Degree

Berkeley offers both academic and professional degrees. 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 doctoral degree.

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

Programs of Study

Programs of study for doctoral degrees are more individualized than those for master’s degrees, permitting more specialization within a field or the establishment of connections among fields. Nevertheless, if you are seeking a doctoral degree, you must have your program of study approved by the graduate adviser of the department or group to which you are admitted or later transferred. University policy requires continuous registration from entrance until receipt of the degree, unless a formal withdrawal is granted by the dean of the Graduate Division.

Your field of study may be in a single department, except for essential related courses in other departments; in several departments; or in an interdisciplinary group. Once you have chosen a field of study, you should confer with your graduate adviser to select the sequence of courses that will best prepare you for qualifying examinations and research work.

Residence Requirement

A minimum of two years or four semesters of academic residence is required for the Ph.D. degree. Academic residence is defined as enrollment in at least 4 units in 100-200 courses. The period during which you are allowed to be in candidacy is limited; after its expiration your candidacy for the degree will lapse. You should consult your department or the Graduate Division for the time permitted in candidacy.

Foreign Language Requirement

The foreign language requirement ensures that you have the ability to acquire wide knowledge in your field of study and to keep up with foreign developments in your field. You are urged to complete the foreign language requirement early in your graduate career. You must fulfill the foreign language requirement before admission to the qualifying examinations and advancement to candidacy. Each graduate program

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may have somewhat different foreign language requirements. If you are a prospective student, you are urged to inquire about the foreign language requirement as soon as possible and, if you can, to fulfill it while still an undergraduate. In some graduate programs, applicants for admission must have satisfied the foreign language requirement before applying.

Qualifying Examinations
Before you are admitted to candidacy, you must pass a qualifying examination administered by a four- or five-member committee approved by the Graduate Council. An oral component is required. You must be registered in the semester in which you take the examinations, and you must have removed any previous deficiencies in training, including incomplete grades in courses that your graduate adviser required for your program. You must have maintained at least a B average in all course work that you undertook in graduate status, and you must have fulfilled the language requirement(s).

Please note: Departments, schools, and groups may have performance standards that are higher than the minimum B average required by the Graduate Division.

Advancement to Candidacy
You must apply for advancement to candidacy, on a form furnished by the Graduate Division, no later than the semester following the one in which you passed your qualifying examinations. The completed form, bearing the endorsement of your graduate adviser chair and dissertation chair, is filed with the Graduate Division. You must pay a fee of $50 when you file the application, and you must have completed all requirements for the doctoral degree except the dissertation before you may be advanced to candidacy.

Normative Time—Doctoral Students
Normative time is defined as the elapsed calendar time in years that under normal circumstances would be needed to complete all requirements for the doctoral degree, assuming that a student is engaged in full-time, uninterrupted study and is making desirable progress toward the degree.

The primary goals of the Normative Time program are to provide incentives to both students and instructional units to reduce the average time taken to complete requirements for the doctoral degree, to facilitate greater degree of continuity in doctoral studies, and to provide a more equitable assessment of fees for doctoral students advanced to candidacy. After advancement to candidacy, eligible students will receive a special grant to offset much of the cost of the educational fee.

The conditions of the Normative Time program are as follows:
1. Upon entry to a Berkeley graduate program, you proceed with course work in the normal fashion until you have completed all requirements for advancement to candidacy. During this period you are registered continuously, except for semesters on approved withdrawn status as appropriate, and are liable for payment of all fees and applicable tuition.
2. Once you have been advanced to candidacy for the doctoral degree, you become eligible in subsequent semesters for a fee offset grant paying part of the educational fee if you have not exceeded the normal time in candidacy for your discipline.
3. You are awarded the grant automatically each semester until your accrued time in graduate status exceeds the normative time set for your program of study. Accrued time is the number of semesters since you first registered, less a maximum of two semesters of approved withdrawn status, and any other adjustments that may be approved by the dean of the Graduate Division.
4. During the entire period of study, you must be registered continuously, except when you are on approved withdrawn status, or during the semester when the filing fee is used in lieu of registration. You will be informed of your eligibility and the number of semesters of fee offset grant support available to you when you are advanced to candidacy. Your application for advancement to candidacy for the doctoral degree must be received by the first day of instruction in the semester for which the first grant is awarded.

The following normative times in semesters have been established:
African American Studies (10)
Agricultural and Environmental Chemistry (13)
Agricultural and Resource Economics (12)
Ancient History and Mediterranean Archaeology (14)
Anthropology (12)
Applied Mathematics (11)
Applied Science and Technology (11)
Architecture (12)
Asian Studies (10)
Astronomy (12)
Bioengineering (10)
Biophysics (12)
Biostatistics (10)
Buddhist Studies (10)
Business Administration (10)
Chemical Engineering (10)
Chemistry (10)
City and Regional Planning (10)
Classical Archaeology (14)
Classics (14)
Comparative Biochemistry (10)
Comparative Literature (14)
Computer Science (10)
Demography (10)
Dramatic Art (10)
East Asian Languages: Chinese (12), Japanese (12)
Economics (10)
Education (12)
Endocrinology (10)
Energy and Resources (10)
Engineering (10)
  Nuclear Engineering (12)
English (12)
*Entomology
Environmental Health Sciences (10)
Environmental Planning (10)
Environmental Science, Policy, and Management (10)
Epidemiology (8)
Ethnic Studies (12)
French (12)
Geography (12)
Geology (10)
Geophysics (10)
German (12)
Health Services and Policy Analysis (12)
Hispanic Literatures (12)
History: Modern Western Languages (12),
  Non-Western Languages (or Non-Indo-European) (14)
History of Art (14)
Human Biodynamics (12)
Infectious Disease and Immunity (10)
Information Management and Systems (12)
Integrative Biology (10)
Italian Studies (12)
Jewish Studies (12)
Jurisprudence and Social Policy: Ph.D. (12),
  J.D./Ph.D. (14)
Latin American Studies (12)
Linguistics (10)
Logic and the Methodology of Science (11)
Mathematics (11)
Medical Anthropology (12)
Microbiology (10)
Molecular and Cell Biology (10)
Music (12)
  Ethnomusicology (14)
Near Eastern Religions (10)
Near Eastern Studies (14)
Neuroscience (10)
Nutrition (10)
Paleontology (10)
Philosophy (10)
Physics (12)
Plant Biology (10)
*Plant Pathology
Political Science (12)
Psychology (10)
Public Health (12)
Public Policy (12)
Rhetoric (12)
Romance Languages and Literatures: French (12),
  Italian (12), Spanish (12)
Romance Philology (10)
Scandinavian Languages and Literatures (12)
Science and Mathematics Education (10)
Slavic Languages and Literatures (12)
Social Welfare (10)
Sociology (12)
*Soil Science
South and Southeast Asian Studies (14)
Statistics (10)
Vision Science (10)
*Wildland Resource Science
Wood Science and Technology (10)

The Candidate's Degree
The degree “Candidate in Philosophy,” which gives formal recognition to a definite state of progress toward the doctorate, may be awarded when you are advanced to candidacy for the Ph.D. degree. The list of graduate degree programs that award the “Candidate in Philosophy” degree is available from Graduate Degrees and Petitions, 302 Sproul Hall.

Annual Review of Doctoral Candidates
The Graduate Council requires all doctoral students who have been advanced to candidacy to meet annually with at least two members of their dissertation committees to discuss progress during the last year and to set goals for the next. Students who are away from campus may complete the evaluation by mail.

The Doctoral Dissertation
The format of the doctoral dissertation is similar to that outlined in the section on the master's thesis. Further information is available from the Graduate Division, or from its Web site at http://www.grad.berkeley.edu/grad/.

The dissertation, the product of independent investigation under faculty supervision, 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 the most important requirement for the doctoral program; the degree is never granted for completion of course work only, no matter how extensive.

You are to work under one of two plans, as adopted by the department, school, or group:

Plan A: The Administrative Committee of the Graduate Council appoints a committee of five Academic Senate members which determines whether you have met the requirements for the degree. Three members of the committee, one of whom must be from a department other than that of your major subject, guide you in research and judge the merits of your dissertation. The entire committee conducts a final oral examination dealing with the relationship between your dissertation and the general field of study in which the subject of the dissertation lies. Admission to the final oral examination may be restricted to the members of the committee, members of the Academic Senate, and guests of equivalent rank from other institutions.
Plan B: The Administrative Committee of the Graduate Council appoints a committee of three Academic Senate members, one of whom must be from a department other than that of your major subject, to guide you in research and judge the merits of your dissertation. This committee may require any necessary conferences to elucidate the subject treated in the dissertation. After presentation of the dissertation but before final action is taken upon it, the committee may, if necessary, require you to defend the dissertation in a formal oral examination.

After your committee has approved your dissertation, two copies must be filed with the Graduate Division by a deadline specified by that office. You must also file an abstract of the dissertation, no longer than 350 words and signed by the committee chair.

See the "Master's Thesis" section for procedures to be followed if committee members disagree about the acceptability of your dissertation.

Programs using Plan A and Plan B are listed below.

Plan A
- Buddhist Studies
- Interdisciplinary Program
- Logic and the Methodology of Science
- Near Eastern Religions
- Romance Philology
- South and Southeast Asian Studies

Plan B
- Agricultural and Environmental Chemistry
- Agricultural and Resource Economics
- Ancient History and Mediterranean Archaeology
- Anthropology
- Applied Mathematics
- Applied Science and Technology
- Architecture
- Asian Studies
- Astronomy
- Bioengineering
- Biophysics
- Biostatistics
- Business Administration
- Chemical Engineering
- Chemistry
- City and Regional Planning
- Classical Archaeology
- Classics—Emphases: Greek, Latin
- Comparative Biochemistry
- Comparative Literature
- Computer Science
- Demography
- Dramatic Art
- East Asian Languages
- Economics
- Education
- Endocrinology
- Energy and Resources
- Engineering
- Engineering Science

English
- Environmental Health Sciences
- Environmental Planning
- Environmental Science, Policy, and Management
- Epidemiology
- Ethnic Studies
- French
- Geography
- Geology
- Geophysics
- German
- Health Services and Policy Analysis
- Hispanic Languages and Literatures
- History
- History of Art
- Human Biodynamics
- Infectious Disease and Immunity
- Information Management and Systems
- Integrative Biology
- Italian Studies
- Jewish Studies
- Jurisprudence and Social Policy
- Latin American Studies
- Linguistics
- Mathematics
- Medical Anthropology
- Microbiology
- Molecular and Cell Biology
- Music
- Near Eastern Studies
- Neuroscience
- Nutrition
- Paleontology
- Philosophy
- Physics
- Plant Biology
- Political Science
- Psychology
- Public Health
- Public Policy
- Rhetoric
- Romance Languages and Literatures—Emphases:
  - French
  - Italian
  - Spanish
- Scandinavian Languages and Literatures
- Science and Mathematics Education
- Slavic Languages and Literatures
- Sociology
- Statistics
- Vision Science
- Wood Science and Technology

Minimum Requirements
All the procedures and regulations described above and in the preceding section on master's degrees constitute the minimum requirements for 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 its field of study.
Exchange Programs

Berkeley students participating in any of the following exchange programs, with the exception of the Inter-campus Exchange Program, will not automatically receive credit for taking course work at the host campus. The courses will be posted in the memorandum column of your transcript. If you want to transfer units, see page 60, "Transfer of Credit from Other Institutions." No more than 4 semester or 6 quarter units are transferable toward the master's degree.

Intercampus Exchange Program

If you are a graduate student registered on any campus of the University, you may go to another campus of the University as an Intercampus Exchange Graduate Student with the approval of your graduate adviser, the chair of the department in which you want to study, the dean of the Graduate Division on the home campus, and the dean of the Graduate Division on the host campus.

You may obtain an application form for the Intercampus Exchange Program for Graduate Students from the office of the dean of the Graduate Division on your home campus. You should complete and file the application form at least three weeks before the opening of the term of enrollment on the host campus. (Please note that all other UC campuses are on the quarter system.)

This privilege is available to graduate students who would like to associate with scholars or fields of study not available on the home campus, or who seek the use of special facilities and collections. Whenever possible, you should make personal arrangements with faculty members on both campuses to ensure that the courses, seminars, or facilities will be available to meet your needs. This privilege will be granted where there is evidence of serious and high-quality scholarship.

As an intercampus exchange student, you register and pay fees on your home campus but have library, health services, and other student privileges on your host campus. You should make arrangements with the Office of the Registrar to follow the enrollment procedure of the host campus so that the grades you obtain in courses taken on the host campus will be transferred to your record on the home campus. Exchange students are considered graduate students in residence on the home campus and are not formally admitted to the host graduate school and department. Unless specifically restricted, fellowship recipients may participate in the Intercampus Exchange Program.

Stanford-Berkeley Exchange Program

If you have a superior academic record, you may participate in the Stanford-Berkeley Exchange Program when it is considered desirable for you to take a limited number of courses that are offered at Stanford but not at Berkeley. Participation in the program must be...
approved by the Graduate Division and your department. Normally, you will not be allowed to participate in this program until you have completed a year of graduate study at Berkeley. Participants 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 want to take courses at Berkeley. If you apply for this program, you must enroll in at least one course at Berkeley. You may obtain further information and an application form from Graduate Degrees and Petitions, 302 Sproul Hall.

**Exchange Program with Hayward, Mills, San Francisco, and Sonoma**

You may also participate in exchange programs with California State University, Hayward; Mills College; San Francisco State University; and Sonoma State University. With the approval of the Graduate Division and your department, you may register and pay applicable fees at Berkeley and be exempt from tuition and fees at the host campus. You may enroll for only one course per semester at the host campus.

**The Exchange Scholar Program**

The Exchange Scholar Program is an experimental program designed to enable doctoral students with superior academic records to study at one of the participating institutions to take advantage of educational opportunities that are not available at Berkeley. Normally, you are eligible to become an exchange scholar only after you have completed one year in a Berkeley graduate degree program. You may take courses or conduct research with particular faculty at the host institution for no more than one year while remaining registered at Berkeley.

Participating institutions are Berkeley, Brown University, University of Chicago, Columbia University, Cornell University, Harvard University, Massachusetts Institute of Technology, University of Pennsylvania, Princeton University, Stanford University, and Yale University. You may obtain further information and an application from Graduate Degrees and Petitions, 302 Sproul Hall.

**Please note:** Guidelines for participation in the exchange program with Stanford University are outlined above under the Stanford-Berkeley Exchange Program.

**Studying Abroad**

Graduate students may participate in the University of California Education Abroad Program (EAP). EAP offers a diverse range of programs, most of which are available to graduate students, in more than 30 countries. Several of the programs do not require foreign language proficiency for participation. Approval from your department and from the Graduate Division is required. For further information, contact the office of Berkeley Programs for Study Abroad, 160 Stephens Hall #2302, University of California, Berkeley, CA 94720-2302, 642-1356; e-mail: eapucb@uclink.berkeley.edu.

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**Tropical Biology**

If you are a registered graduate student interested in doing field research in the tropics, see Integrative Biology 289 for information.

**Interdisciplinary Groups**

Berkeley has established graduate programs in a number of fields that cut across conventional departmental lines yet comprise distinct cores of knowledge. These programs are administered by groups of faculty from several related departments and, in certain instances, from several campuses. If you are enrolled in these programs you 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 gives you access to a range of facilities not ordinarily open to students enrolled in departmental programs. In some cases (e.g., medieval studies), a faculty committee is appointed specifically to advise you and the interested departments on setting up a program that will best meet the departments' and your views of the intellectual quality of the proposed 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 current list of graduate groups on the Berkeley campus:
Group in Agricultural and Environmental Chemistry
Professor Norman Terry, Chair
c/o Department of Plant and Microbial Biology
111 Koshland Hall #3102

Group in Ancient History and Mediterranean Archaeology
Professor Erich S. Gruen, Chair
3422A Dwinelle Hall #2600

Group in Applied Science and Technology
Professor Eugene E. Haller, Chair
c/o Materials Science and Mineral Engineering
553 Evans Hall #1760

Group in Asian Studies
Professor Robert R. Reed, Chair
2223 Fulton Street, Room 521, #2318

Group in Bioengineering
Professor Steven L. Lehman, Chair
c/o Engineering Interdisciplinary Studies
230 Bechtel Engineering Center #1708

Group in Biophysics
Professor Robert M. Glaeser, Chair
233 Donner Lab #3206

Group in Biostatistics
Professor Steve Selvin, Chair
c/o School of Public Health
140 Warren Hall #7360

Group in Buddhist Studies
Professor Padmanabha S. Jaini, Chair
c/o Department of South and Southeast Asian Studies
342 Dwinelle Hall #2540

Group in Comparative Biochemistry
Professor Nancy K. Amy, Chair
c/o Department of Nutritional Sciences
127 Morgan Hall #3104

Group in Endocrinology
Professor Charles Nicoll, Chair
c/o Department of Integrative Biology
281 Life Sciences Addition #3140

Group in Energy and Resources
Professor John Harte, Chair
c/o Group Office, 310 Barrows Hall #3050

Group in Environmental Health Sciences
Professor Catherine P. Kosland, Chair
c/o School of Public Health
751 University Hall #7360

Group in Epidemiology
Professor Arthur Reingold, Chair
c/o School of Public Health
140 Warren Hall #7360

Group in Ethnic Studies
Professor Elaine H. Kim, Chair
c/o Department of Ethnic Studies
508A Barrows Hall #2570

Group in Folklore
Professor Alan Dundes, Chair
c/o Department of Anthropology
232 Kroeber Hall #3170

Group in Health and Medical Sciences
W. Thomas Boyce, Chair
c/o Program Office
570 University Hall #1190

Group in Health Services and Policy Analysis
Professor James Robinson, Chair
c/o School of Public Health
418 Warren Hall #7360

Group in Infectious Disease and Immunity
Professor George Sensabaugh, Chair
c/o School of Public Health
140 Warren Hall #7360

Group in International and Area Studies
Professor Richard Buxbaum, Dean
International and Area Studies
101 Stephens Hall #2300

Group in Jewish Studies
Professor Bluma Goldstein, Chair
c/o Department of German
M15 Wheeler Hall #3243

Group in Latin American Studies
Professor Michael Johns, Chair
c/o International and Area Studies
101 Stephens Hall #2300

Group in Logic and the Methodology of Science
Professor Stephen Neale, Chair
c/o Department of Philosophy
233 Moses Hall #2390

Committee on Medieval Studies
Professor Geoffrey Koziol, Chair
c/o Department of History
3116 Dwinelle Hall #2550

Group in Microbiology
Professor George Sensabaugh, Chair
c/o School of Public Health
140 Warren Hall #7360

Group in Neuroscience
Professor Carla Shatz, Chair
c/o Department of Molecular and Cell Biology
121 Koshland Hall #3200

Group in Nutrition
Professor Barry Shane, Chair
c/o Department of Nutritional Sciences
127 Morgan Hall #3104

Group in Range Management
Professor James Bartolome, Chair
c/o Department of Environmental Science, Policy, and Management
145 Mulford Hall #3114

Group in Romance Philology
Professor Joseph J. Duggan, Chair
c/o Department of French
4415 Dwinelle Hall #2580

Group in Science and Mathematics Education
Professor Barbara White, Chair
c/o School of Education
4533 Tolman Hall #1670
Group in Urban Design
Professor Michael Southworth, Chair
c/o Department of Landscape Architecture and
Environmental Planning
304 Wurster Hall #2000

Group in Vision Science
Professor Martin S. Banks, Chair
c/o School of Optometry
506 Minor Hall #2020

Group in Wood Science and Technology
Professor Frank Beall, Chair
c/o Forest Products Laboratory
478 Richmond Field Station

Advisory Group
(not degree program)
Committee for Certificate in Russian and East
European Studies
Professor Victoria Bonnell, Chair
Center for Slavic and East European Studies
361 Stephens Hall

Designated Emphasis Group
Group on Women, Gender, and Sexuality
Professor Caren Kaplan, Chair
c/o Department of Women’s Studies
2241 College Avenue, Room 11, #1070

Individual Doctoral Programs
To allow you to work in a field that, in its breadth,
falls between that of a department and an interdisciplinary group, the Graduate Division permits the informal establishment of ad hoc programs leading to the Ph.D. degree. You will be considered for an interdisciplinary program only if you have completed at least two semesters of graduate study in a doctoral program on this campus and have shown superior academic performance in your graduate studies here. In these programs, you may prepare a proposal for a course of study under the sponsorship of five faculty members. Final approval of every individual graduate program and admission of each student into such a program must be granted by the Graduate Council. You must complete degree requirements in accordance with Plan A of the Graduate Council policies, and the degree is awarded in a field approved for you by the council.

Teaching and Research Appointments
Many departments make graduate student instructorships available to qualified graduate students, and departments, centers, and institutes often seek qualified graduate students for research appointments. For specific information see the section “Fees and Financial Aid,” beginning on page 69.

Internships
A number of internships are available to graduate as well as undergraduate students. For information see “Research and Internships” on page 46.

General Rules and Academic Policies
A brief summary follows of some of the general rules and policies you are subject to as a graduate student. For more exhaustive coverage, see the section “Academic Policies,” beginning on page 77.

Standards of Scholarship
You must receive a grade of A, B, C (including pluses and minuses), or S in your course work to satisfy degree requirements. You will not receive course credit for courses graded below C-. You must maintain a grade-point average of 3.0 in all upper division and graduate course work taken as a graduate student. Your department, school, or group may establish more stringent standards.

Probation and Dismissal
You are subject to probation and dismissal if your grade-point average falls below 3.0 or that required by your department, school, or group; if you have too many Incomplete grades; if your written work is substandard; or if you fail to make adequate progress toward the degree. You may appeal dismissal to the Graduate Council of the Academic Senate. To obtain a copy of this policy, contact the Graduate Division’s Office of the Dean, 424 Sproul Hall, 642-5472.

Normative Time
For information about normative time (the time needed to complete all requirements for the doctoral degree), see page 62.

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

Postdoctoral Fellows and Visiting Scholars
Prospective fellows or scholars should communicate with the chair of the department, school, or research unit in which they are interested to determine whether the facilities they require are available and whether they meet eligibility requirements for an honorary appointment. With rare exceptions, visiting scholars must hold a doctoral degree or its equivalent. Visiting scholars may not be students enrolled in or on leave from another institution of higher education, candidates for a graduate degree, or employees of any University of California campus. Foreign fellows or scholars should communicate with Services for International Students and Scholars, International House, to determine whether they hold the proper visa to assume an appointment.
Students in Civil Engineering 184 work on a team surveying problem of horizontal curve layout. The student with his arms raised has just established the alignment of a point on the curve by using the optical line of sight of the telescope on the theodolite.
Financial Aid 1995-96
Undergraduates receiving financial aid: 64%
Percent of financial aid that is need-based: 80%
Average amount awarded: $8,418
Undergraduates in College Work-Study Program: 11%
Undergraduates working part-time on campus (1994-95): 26%

Trivial Pursuit
No. 15
Why is there a yellow concrete "C" on the hill above the campus?
(Answer on page 456.)

It is very important that you carefully consider the total financing of your education, from your first term at Berkeley to completing your degree objective. If financial help will be needed beyond funds that you or your family are able to provide, you should make the necessary applications for financial assistance well in advance of enrollment. You should pay particular attention to early deadlines for application for grants, scholarships, Federal Work-Study, Federal Perkins, and Federal Direct Stafford/Ford Loans. While the needs and resources of each student differ, the University can provide a general list of fees and expenses normally encountered. Note that fees are subject to change without notice.

Part of your fees may be refunded if you cancel your registration before the opening day of the semester or withdraw before the beginning of the sixth week of classes of any semester. (See Index, "Schedule of Refunds"). A circular on refunds, Student Fees and Deposits, is also available from the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall.

Total Expenses. The cost of attending the University varies according to individual circumstances. The expenses listed below are approximate costs for the nine-month academic year and should be used only as a guideline.

Required Fees

The fees in this section are those in effect for the spring semester 1997. At press time, fees for future semesters had not been determined. Please call 643-7490 for current information, or see the Office of the Registrar’s Web site at http://registrar.berkeley.edu:4202.

University Registration Fee—$356.50 per semester. This fee is paid by all students and covers normal expected usage of facilities such as laboratories and gymnasiums (except for instructional programs associated with these facilities) and services such as counseling, placement, and health.

Educational Fee—This fee is paid by all students at $1,543 per semester. A portion of this fee may be temporary. The educational fee is used to support a portion of the student services costs of the educational program, such as financial aid, social and cultural activities, Admissions and Registrar operations, counseling and career guidance, student affirmative action, and academic tutoring. In exceptional circumstances the educational fee may be reduced by one-half for part-time undergraduate students. Approval of part-time undergraduate study is made only in exceptional cases and is based on considerations of occupation, family responsibility, and health. Applications must be approved by the appropriate dean before the start of each term. A fee reduction will be made only if you enroll in no more than two courses.

Berkeley Campus Fee—This fee is paid by all students in the amount of $78.75 per semester. It provides support for a wide range of activities sponsored by the ASUC, including work with academic and administrative units of the campus. It covers use of the Student Union, helps pay construction costs of the Union building, and assists with the provision of ethnic studies on the Berkeley campus.

University Health Insurance Fee—Undergraduates, $199 per semester; graduate students, $219 per semester. All students attending the University of California,
### Undergraduate Residence Halls

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room and Board (includes food, housing, and utilities)</td>
<td>$7,226</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$720</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>$1,734</td>
</tr>
<tr>
<td>Transportation</td>
<td>$300</td>
</tr>
<tr>
<td><strong>Total Living Expenses</strong></td>
<td>$9,980</td>
</tr>
<tr>
<td>Fees (for two semesters)</td>
<td>$3,956</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>$398</td>
</tr>
<tr>
<td><strong>Total Budget (for California resident)</strong></td>
<td><strong>$14,334</strong></td>
</tr>
<tr>
<td>Nonresident Tuition</td>
<td>$8,394</td>
</tr>
<tr>
<td><strong>Total Nonresident Budget</strong></td>
<td><strong>$22,728</strong></td>
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</tbody>
</table>

### Undergraduate Off Campus

<table>
<thead>
<tr>
<th>Item</th>
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<tbody>
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<td>$3,960</td>
</tr>
<tr>
<td>Food</td>
<td>$2,750</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$720</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>$1,734</td>
</tr>
<tr>
<td>Transportation</td>
<td>$300</td>
</tr>
<tr>
<td><strong>Total Living Expenses</strong></td>
<td>$9,464</td>
</tr>
<tr>
<td>Fees (for two semesters)</td>
<td>$3,956</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>$398</td>
</tr>
<tr>
<td><strong>Total Budget (for California resident)</strong></td>
<td><strong>$13,818</strong></td>
</tr>
<tr>
<td>Nonresident Tuition</td>
<td>$8,394</td>
</tr>
<tr>
<td><strong>Total Nonresident Budget</strong></td>
<td><strong>$22,212</strong></td>
</tr>
</tbody>
</table>

### Undergraduate Commuter (lives with parents)

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Food</td>
<td>$2,004</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$720</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>$1,734</td>
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<tr>
<td>Transportation</td>
<td>$300</td>
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<tr>
<td><strong>Total Living Expenses</strong></td>
<td>$4,758</td>
</tr>
<tr>
<td>Fees (for two semesters)</td>
<td>$3,956</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>$398</td>
</tr>
<tr>
<td><strong>Total Budget (for California resident)</strong></td>
<td><strong>$9,112</strong></td>
</tr>
</tbody>
</table>

### Grad/Law/Optometry

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
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<td>Books and Supplies</td>
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</tr>
<tr>
<td>Personal Expenses</td>
<td>$1,734</td>
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<tr>
<td>Transportation</td>
<td>$300</td>
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<tr>
<td><strong>Total Living Expenses</strong></td>
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<tr>
<td>Fees (for two semesters)</td>
<td>$3,956</td>
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<tr>
<td>Health Insurance</td>
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<tr>
<td><strong>Total Budget (for California resident)</strong></td>
<td><strong>$15,096</strong></td>
</tr>
<tr>
<td>Nonresident Tuition</td>
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</tr>
<tr>
<td><strong>Total Nonresident Budget</strong></td>
<td><strong>$23,490</strong></td>
</tr>
</tbody>
</table>

- Students enrolled in the UC Berkeley Extension Fall Program for Freshmen are assessed fees through the Office of the Registrar. For information call 642-5990.
- Entering M.B.A. students in the Haas School of Business are assessed an additional fee of $6,580; continuing students, an additional $4,580; and Evening Program students, an additional $10,529.
- Entering students in the Boalt School of Law pay an additional $6,622 in fees and books; second-year students, an additional $4,622; third-year students, an additional $2,622; and JSP students, an additional $246.
- Graduate students in the School of Optometry are assessed an additional $2,000.

**Trivial Pursuit**

No. 16

The Berkeley campus boasts what are thought to be the tallest specimens of hardwood trees in North America. What and where are they?

(Answer on page 456.)
Berkeley must be covered by major medical health insurance. All students are therefore automatically enrolled in the University Major Medical Health Insurance Plan, which provides for specialized care and hospitalization and supplements campus care services provided at the University Health Services (UHS) at the Tang Center. The cost for the plan is billed with registration fees each semester. Payment for both the fall and spring semesters provides major medical coverage for the entire calendar year, including summer. You may waive out of the University’s plan and not pay the fee if you can show proof of coverage comparable to the University’s plan. For more information, contact the Student Health Insurance Office, University Health Services, Tang Center, 2222 Bancroft Way, or call 642-5700.

Nonresident Tuition—$4,197 per semester. At the time of registration, you are classified as a resident or nonresident for tuition purposes. Only U.S. citizens and holders of immigrant visas can become qualified for resident classification. Under California law you may be classified as a resident for tuition purposes if you have lived in California for more than one year immediately before the day instruction begins at the last of the campuses to open for a semester. Residence is the combination of physical presence within California, intent to live in California permanently, plus demonstrated financial independence for the two years immediately preceding the request for residence classification. Nonresidents must pay a nonresident tuition fee each semester. For detailed information regarding the establishment of California residence, see the Appendix or write to the Attorney in Residence Matters, 300 Lakeside Dr., Seventh Floor, Oakland, CA 94612-3565.

Collection Costs—Additional costs may be assessed on any defaulted debts requiring remedial collection activity. These costs may include applicable attorney’s fees.

Men’s and Women’s Athletic Events—Student season tickets are available for purchase at the Athletic Ticket Office for football and men’s and women’s basketball. Admission to other events is available in the form of a sports pass. For prices and additional information, call 642-3277.

Fees and Financial Aid

Directory of Financial Aid Offices:
Undergraduate Financial Aid, 211 Sproul Hall
642-6442
Graduate/Law/Optometry, 201 Sproul Hall
642-0485
World Wide Web: http://uga.berkeley.edu/~faa/default.htm

Special Financial Aid Services:
Committee on Prizes, 229 Sproul Hall
643-3498
Director’s Office, 225 Sproul Hall
642-0645
Emergency Loans, 205 Sproul Hall
642-0470
Undergraduate Scholarship Office, 210 Sproul Hall
642-6363
Work-Study Program, 212 Sproul Hall
642-5425

Additional Fees and Expenses

Late Fee Payment—Payments must be received, not postmarked, by the deadline indicated on the Campus Accounts Receivable System (CARS) statement. A $30 fee will be charged if registration fees are not paid by that date. All other delinquent accounts over $50 will be assessed penalties as follows:
$20 on accounts one month past due;
$25 on accounts two months past due and monthly thereafter until the account is brought current.

Returned Check Charges—A processing charge of $50 is assessed when the bank returns a check for payment of registration fees. A processing charge of $20 is assessed for all other returned checks.

Late Enrollment—$50. Continuing students who fail to call Tele-BEARS during Phase I or Phase II are liable for this fee.

Reinstatement after having been dropped from University rolls—$10.

The Financial Aid Office is located on the second floor of Sproul Hall. Please refer to the directory to the left for the addresses and telephone numbers of the various units. You may obtain detailed information about the various kinds of student aid available to Berkeley students by calling the appropriate unit.

Students may apply for a variety of financial aid funds, including grants, scholarships, work-study, and loans. Financial aid applications and supporting information will be sent to entering undergraduate and graduate students. New financial aid applications will not be sent to continuing students; they should stop by the Financial Aid Office in December or January to pick up their forms. The deadline for filing each year is normally March 2.

All financial aid except fellowships, honorary scholarships, teaching and research appointments, and prizes is granted on the basis of financial need. Financial need is the difference between the cost of attendance for the academic year and the amount you and your

At the time of registration, by mail or in person, students pay the following fees each semester:

<table>
<thead>
<tr>
<th>Type of Student</th>
<th>Fees per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Students</td>
<td></td>
</tr>
<tr>
<td>Residents</td>
<td>$2,177.25</td>
</tr>
<tr>
<td>Nonresidents</td>
<td>$6,374.25</td>
</tr>
<tr>
<td>Graduate Students</td>
<td></td>
</tr>
<tr>
<td>Residents</td>
<td>$2,179.25</td>
</tr>
<tr>
<td>Nonresidents</td>
<td>$6,394.25</td>
</tr>
</tbody>
</table>

*These fees are those that were in effect for spring 1997. Fees for subsequent semesters had not been determined when this catalog went to press. Please call 643-7490 for current information or visit the Web site at http://registrar.berkeley.edu:4202.
family can contribute toward those costs. Prizes are awarded on the basis of competition or outstanding ability in some area of creative or scholarly endeavor. Most scholarships are awarded on the basis of academic performance and financial need. Regents’, Chancellor’s, and Alumni scholarships, however, are awarded solely in recognition of outstanding achievement and promise. A separate booklet describing the prizes offered to Berkeley students is available from the Committee on Prizes, 229 Sproul Hall.

Much of the funding for graduate students comes from sources other than the Financial Aid Office. Fellowships are awarded through the Graduate Division. Information and applications are available at the Graduate Division, 318 Sproul Hall. The deadline is January 5, but there are exceptions. Check with your department to confirm its filing dates.

**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 you the opportunity to qualify for a commission as an officer in the Army, Navy, Air Force, or Marine Corps while completing your college education. Reserve Officers Training Corps (ROTC) courses are offered by three departments: Aerospace Studies (Air Force), Military Science (Army), and Naval Science (Navy and Marine Corps). Scholarship programs are available; they carry a monthly stipend and pay for tuition, books, and most fees for qualified students. Individual programs are described under Military Officers Education Program in the courses section of this catalog.

**Veterans’ Educational Benefits**

The Veterans Services Unit in the Office of the Registrar certifies eligible veterans, dependents, surviving spouses, and reservists for educational benefits. As the campus liaison to the Veterans Administration and the State Department of Veterans Affairs, Veterans Services can answer all questions regarding your eligibility for benefits and can assist you with counseling and referrals. A veterans’ work-study program, a tutorial assistance program, and a fee waiver program are also available.

If you are a veteran newly admitted to Berkeley, please submit a certified copy of your Certification of Release or Discharge from Active Duty (form DD-214). You may also need to submit certified copies of your marriage certificate, dependent children’s birth certificates, and final divorce decree, if applicable. If you are a veteran’s dependent, you must provide your spouse or parent’s VA claim number and social security number. The VA pamphlet, “A summary of Veterans Administration Benefits,” is available upon request.

If you have questions or need more information, you may write to the Veterans Services Unit, Office of the Registrar, 120 Sproul Hall, or call 642-1592.
Since I came to Berkeley, I've worked continuously on campus, both as a publications intern and as a work-study student. Work-study has expanded my marketable skills 100 percent.

4th-year student

Fees and Financial Aid

In addition to departmental block grants and fellowships funded by the Graduate Division, which provide a stipend plus tuition and fees, the following fellowships are awarded in open competition:

**The Berkeley Fellowships for Graduate Study.** Fellowships are awarded to students of outstanding achievement and high promise who will begin graduate study toward the doctoral degree in any field. These are three-year awards, based on continued excellence in the fellow's advanced degree program, with an initial annual stipend of $13,000, plus tuition and fees.

**University Predoctoral Humanities Fellowships.** Entering humanities students who enroll in Ph.D. programs and who plan to pursue a career in teaching and research are eligible for this fellowship, which provides $12,500, plus tuition and fees, for the first year of graduate study and for the dissertation year. For at least the second and third years, departments provide support in the form of teaching or research appointments.

**The Chancellor's Opportunity Predoctoral Fellowships.** Fellowships are awarded to underrepresented students of outstanding achievement who are beginning study toward the doctoral degree and are planning a career in university teaching. Fellowships provide a stipend of $11,500, plus tuition and fees. The fellowships are for three years and are based on continued excellence in the fellow's advanced degree program.

Note: Eligibility criteria for fellowship programs for underrepresented women and ethnic minorities are subject to change pursuant to changes in law and University policy.

**Foreign Language and Area Studies (FLAS) Fellowships.** The U.S. Department of Education allocates fellowship funds to institutions of higher education that offer advanced training in modern foreign language and area studies. Area studies is defined as a program of comprehensive study of aspects of a society or societies including geography, history, culture, economy, politics, international relations, and languages. To be eligible, you must be a citizen or permanent resident of the U.S., show potential for high academic achievement, and plan to enroll in a course in the language of award.

**Fellowships, Graduate Scholarships, and Academic Appointments for Graduate Students**

Numerous programs—from fellowships, grants-in-aid, and loans to assistantships, subsidized housing, and child care programs—provide ways in which you can cut the cost of graduate school. Some of the programs are need-based and are administered through the Financial Aid Office. These programs are discussed in preceding paragraphs. Others are merit-based and are administered through the Graduate Division Fellowships and Appointments Office and the academic departments. For detailed information about all the sources available to you, consult the “Graduate Application for Admission and Fellowships,” available from the department to which you wish to apply. The following paragraphs discuss merit-based fellowships, graduate scholarships, and teaching and research appointments, the primary sources of non-loan financial aid for graduate students.

**Fellowships and Graduate Scholarships**

Applications for University fellowships and graduate scholarships are considered only once a year. Awards are made for the academic year beginning with the fall semester.

In assigning awards, the Committee on Fellowships and Graduate Scholarships and your department will consider the extent and quality of your previous academic work, evidence of your ability in research or other creative accomplishments, your intellectual capacity, and promise of productive scholarship.
Eugene Cota-Robles Fellowships. These awards are intended to increase substantially the number of doctoral awards granted to ethnic minorities and women in disciplines in which they are underrepresented as recipients of doctoral degrees. The three-year awards carry an annual stipend of $12,500, plus tuition and fees for two years, followed by a one-year departmental teaching or research appointment. To be eligible, you must be a U.S. citizen or permanent resident and plan a career in teaching and research.

Note: Eligibility criteria for fellowship programs for underrepresented women and ethnic minorities are subject to change pursuant to changes in law and University policy.

Graduate Opportunity Four-Year Fellowships. The purpose of this program is to increase the enrollment of women and ethnic minorities in departments in which they have been traditionally underrepresented. To be eligible for an award under this program, you must have demonstrated scholastic achievement and be an entering full-time registered graduate student and a citizen or permanent resident of the United States. Awards carry two years of fellowship support ($11,000 stipend, plus tuition and fees the first year; $11,000 plus fees the second year) and two years of departmental support in the form of a teaching or research appointment. The fellowship covers fees for all four years.

Note: Eligibility criteria for fellowship programs for underrepresented women and ethnic minorities are subject to change pursuant to changes in law and University policy.

Regents Intern-Fellowships. Entering humanities or social science students who enroll in a Ph.D. program and who plan to pursue a career in teaching and research are eligible for this fellowship, which provides four years of support: two years of fellowship support ($11,000 stipend, plus tuition and fees the first year; $11,000 plus fees the second year) and two years of departmental support in the form of a teaching or research appointment. The fellowship covers fees for all four years.

Fellowship Application Procedure. If you are applying for admission/fellowship, you must file the combined Graduate Application for Admission and Fellowships according to instructions included in the application. You are strongly advised to take the October Graduate Record Examination.

If you are applying for admission for the spring semester, you should see your department for an award to begin the following fall semester.

If you are a continuing or returning graduate student at Berkeley, you may obtain the necessary fellowship application materials from your department or graduate group.

The fellowship application deadlines for new students range from December 15 to January 5, depending on the department; see the Application for Admission and Fellowships for deadlines. Continuing students should see their departments before January 5.

Announcement of Awards. Awards are announced by April 1 and must be accepted or declined, in writing, by April 15.

Fellowship Supplementation. Fellows receiving stipends of $6,500 or more may be employed no more than 25 percent time per semester as teaching or research assistants or in similar educationally relevant positions. Any exception to this policy must be approved by the dean of the Graduate Division upon recommendation of the graduate adviser.

Graduate Opportunity Program (GOP) The University maintains its commitment to diversity and excellence. The Graduate Opportunity Program is part of that commitment. The purpose of the Graduate Opportunity Program is to assist in increasing the number of underrepresented students entering and completing higher degrees at the University. To that end, GOP oversees an ongoing program of outreach activities, financial assistance, and support services for students from groups that have been underrepresented in graduate and professional programs in the United States. The University has identified African Americans, Native American/American Indians, Pacific Islanders, Mexican Americans (Chicanos), Filipino Americans, and Puerto Ricans as the most severely underrepresented, and it recognizes that Asian Americans and Latinos are underrepresented in certain fields. U.S. citizenship or permanent resident status is required.

Graduate Opportunity Program awards are based on evaluation of academic promise, financial need, and available program funds. These awards provide a maximum stipend of $7,000 for students in master's degree programs and up to $10,500 for students in the Ph.D. programs, plus payment of fees. GOP awards are subject to verification of financial need. Master's degree students are eligible for one year of support. If they are
later admitted to a doctoral program, they will be eligible for a second year of GOP support. Doctoral students usually receive a two-year award; the second year is awarded if they are making satisfactory progress and apply to renew their grants.

Applications for prospective students are included in the Graduate Application for Admission and Fellowships. Applicants are also required to complete the Free Application for Federal Student Aid (FAFSA) for determination of financial need.

Note: Eligibility criteria for fellowship programs for underrepresented women and ethnic minorities are subject to change pursuant to changes in law and University policy.

Application fee waivers are also available for economically disadvantaged students. The request forms are available at the Graduate Admissions Office and the Graduate Opportunity Program Office.

For further information, write to the Graduate Opportunity Program, Graduate Division, University of California, Berkeley; Berkeley, CA 94720-5900 or call 643-6010.

Teaching and Research Positions

Teaching Appointments. Many departments make graduate student instructorships available to qualified graduate students, providing them with stipends of $1,281 to $1,524 per month for half-time appointments (1996-97 rate). Appointments are half time or less. Graduate student instructors must be registered full-time students. Chosen for scholarly achievement and promise as a teacher, appointees serve the apprenticeship under active supervision of the regular faculty. Advancement to candidacy, teaching experience, and continuous and satisfactory progress toward the degree are rewarded with appointment to the higher steps of graduate student instructor. In some departments, students working for a Ph.D. are required to complete a specified minimum period of teaching as part of their degree program. If interested, you should apply directly to the chair of the department in which you wish to teach.

All students who have graduated from institutions in non-English-speaking countries will be required to demonstrate competence in spoken English before they are appointed as graduate student instructors. Applicants are strongly encouraged to take the Test of Spoken English (TSE) in their home countries. Enrolled students should contact their major departments for details. For information on registering to take the TSE, contact the TOEFL agent in your home country or at the address given on page 52.

Note: The TOEFL is not a test of oral English proficiency, and it may not be substituted for the TSE.

International students who have not taken the TSE before their arrival at Berkeley must take and pass the Speaking Proficiency English Assessment Kit (SPEAK) before receiving a teaching appointment. For information on SPEAK testing and English language proficiency courses, contact the Graduate Student Instructor Teaching and Resource Center, 301 Sprout Hall, 642-4456.

Research Appointments. If you are a qualified registered full-time graduate student, you may seek a research appointment in the departments, centers, and institutes of the University. The stipend ranges from $1,104 to $1,591 per month for a half-time appointment (1996-97 rate). The duration and extent of such an appointment may vary. If interested, you should apply directly to the department, center, or institute in which you wish to work.

Stipends and Fee Remissions. Stipend figures for all positions mentioned above are subject to United States income tax deductions. Figures given are gross, net not, and do not reflect deductions. If you are offered an appointment, you should obtain information about payment schedules, since payment for work performed is later than the deadline for payment of registration fees. For teaching appointments, payment is in 10 equal installments (five installments per semester).

In order to ensure proper academic progress, candidates for higher degrees may not be appointed by the University in any capacity at more than half time during the academic year without the express consent of the dean of the Graduate Division. Summer appointments may be full time. Graduate students appointed by the University to most academic titles must be registered for at least 8 units per semester in 100-200 series courses. Units in the 600 series may be substituted for 200-level units when appropriate. Lower division units taken to prepare for departmental requirements (languages, mathematics, statistics) may be substituted for 100-level units.

Graduate student instructor and graduate student researcher appointments may include coverage of the premium for the Student Health Insurance Plan (SHIP) and a partial remission of registration fees. Doctoral students with graduate student researcher appointments at 45 percent time for the entire semester may be eligible for remission of nonresident tuition if they meet certain other criteria. See your department to determine eligibility.
Berkeley's Department of Music is ranked among the top three in the country. Among its extracurricular offerings are concerts, performing groups, private lessons, and the best university music library in the land.
The Semester System

Under the semester system on the Berkeley campus, the academic year is divided into two semesters and one summer session. Quarter units, either earned previously at Berkeley or at another institution, are converted to semester units by multiplying by two-thirds; for example, 180 quarter units equal 120 semester units.

Courses and Units

Most University courses are assigned a unit value. One unit represents three hours of work per week by the student, including both class attendance and preparation. Laboratory, discussion, quiz, or review sessions may or may not be given unit value. For graduate courses (numbered 200 and above) it is generally understood that 1 unit should require four hours per week of effort on the part of the student, including time spent in class, laboratories, and outside reading and preparation.

Grades

The work of all students on the Berkeley campus is reported in terms of the following grades: A (excellent), B (good), C (fair), D (barely passing), F (failure), P (passed at a minimum level of C-), NP (not passed), S (satisfactory, passed at a minimum level of B-), U (unsatisfactory), I (work incomplete due to circumstances beyond the student's control, but of passing quality), IP (work in progress; final grade to be assigned upon completion of entire course sequence). The grades A, B, C, and D may be modified by plus (+) or minus (-) suffixes.

A course in which the grades A, B, C, D, or P (undergraduate students only) is received is counted toward degree requirements. A course receiving the grade S (graduate students only) is similarly counted unless otherwise specified in the course description. A course in which the grade F, NP, or U is received is not counted toward degree requirements. A course in which the grade of I or IP is received is not counted toward degree requirements until the I or IP is replaced by grade A, B, C, D, P, or S.

Grade Points

Grade points per unit are assigned as follows: A=4, B+=3, C=2, D=1, and F=0. When attached to the grades A, B, C, or D, plus (+) grades carry three-tenths of a grade point more per unit, and minus (-) grades three-tenths of a grade point less per unit than unsuffixed grades, except for A+, which carries 4.0 grade points per unit as does the A.

Grade-Point Average

Your grade-point average is computed on courses undertaken in the University of California, with the exception of courses undertaken in University Extension. Grades A, B, C, D, and F are used in determining your grade-point average; grades IP, P, S, NP, and U carry no grade points and are excluded from all grade-point computations. Grade I, if assigned before fall 1973, is included and is computed as an F; an I grade assigned fall 1973 and later is excluded from computations. For additional information, see "Repetition of Courses" below.

Computation of Grade-Point Averages

<table>
<thead>
<tr>
<th>Grade</th>
<th>Units</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>B+</td>
<td>3</td>
<td>9.9</td>
</tr>
<tr>
<td>C-</td>
<td>3</td>
<td>5.1</td>
</tr>
<tr>
<td>P</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>9</strong></td>
<td><strong>27</strong> Average <strong>3.000</strong></td>
</tr>
</tbody>
</table>

Special Provisions—Graduate Students

Only courses graded A, B, C (with or without plus or minus signs), or S are accepted in satisfaction of degree requirements. Courses graded below C do not yield unit credit toward a higher degree, regardless of your overall grade-point average. Graduate students must maintain a minimum grade-point average of 3.0 in all upper division and graduate course work undertaken in graduate standing in the University of California or its exchange programs. Please note that
departments, schools, and groups may have a higher performance standard than the minimum B average required by the Graduate Division. You must also work full time at your academic or professional program unless a program with fewer units is approved by your graduate adviser. In addition, you must successfully complete all course work required by your department, school, or group program, be advanced to candidacy, pass the required examinations, and fulfill other requirements specified for the program.

For a course extending more than one semester in which evaluation of your performance is deferred until the end of the final semester, provisional grades of in progress (IP) may be assigned in the intervening semesters. The provisional grades are replaced by the final grade if you complete the full sequence. If you do not complete the full sequence, the Berkeley Division of the Academic Senate is authorized to regulate the award of credit.

With the consent of the department involved, graduate students may enroll in courses in the 600-series. These courses are evaluated by means of the grades satisfactory and unsatisfactory (S and U). They prepare you for appropriate master’s or doctoral examinations and do not count toward academic residence or the unit requirements for a higher degree. Beginning with fall semester 1985, you may earn 1-8 units of 601 or 602 per semester or 1-4 units per summer session. You may accumulate a maximum of 16 units in 601 and 602, respectively, toward examination preparation. No credit is allowed for work graded unsatisfactory.

Passed/Not Passed and Satisfactory/Unsatisfactory Grades

If you are an undergraduate in good academic standing (2.0 grade-point average or better, or in good academic standing under the academic probation regulations of your college or school), you may elect to take letter-graded courses on a passed/not passed basis, and if you are a graduate student in good academic standing, you may elect to take letter-graded courses on a satisfactory/unsatisfactory basis with the consent of your department, school, or group. Credit for courses taken on these bases is limited to one-third of the total units that you have taken and passed on the Berkeley campus at the time your degree is awarded. Included in this one-third are any units completed in an Education Abroad program, or on another University of California campus in an intercampus visitor or exchange program, or in a joint doctoral program. For graduate degree programs, grades of Satisfactory assigned in courses numbered 299 and in courses of the 300, 400, or 600 series are excluded from this computation. If you enroll in a course offered only on a passed/not passed or satisfactory/unsatisfactory basis, you will be graded P/NP if an undergraduate and S/U if a graduate.

A course that is required in or prerequisite to your major may be taken on a P/NP or S/U basis only upon approval of the faculty of your school or college.

If you are a special or limited-status student, you may take courses on a P/NP basis at the discretion of the dean of your college or school. You may not repeat on a P/NP basis a course that you have previously taken on a letter-graded basis.

The option of being graded P/NP or S/U in a course may be cancelled if you are found to be ineligible for the option. If the course is offered on a P/NP or S/U basis only, it may be deleted from your study list at the option of your dean.

If you want honors at graduation, you should consult your college, school, or division for additional restrictions.

Your level of performance must correspond to a minimum letter grade of C- if you are to receive a passed grade, and to a B- if you are to receive a satisfactory grade.

These rules may be further limited by the faculties of the various schools and colleges and by the Graduate Council.

Grade I (Incomplete)

The grade I may be assigned if your work in a course has been of passing quality but is incomplete for reasons beyond your control. Prior arrangements must be made with the instructor, because in assigning the I grade the instructor is required to specify the reasons to the department chair.

For graduate students, the I grade will remain on the record until the required work is completed. Graduate students must finish the course requirements as soon as possible. To remove an I grade from your record, you must file the appropriate petition and fees with the Office of the Registrar, 120 Sproul Hall.

Trivial Pursuit No. 19
What did University professors “see through” in 1896, before anyone else in the United States?
(Answer on page 457.)
Degrees Awarded
1995-96:

Bachelor's 5,678
(More Berkeley graduates go on to earn Ph.D.'s than graduates of any other U.S. university)
Master's 1,601
Ph.D. 770
(Berkeley is the nation's leading supplier of Ph.D.'s)
Professional 338
Certificate 57
Candidate 99
Total 8,543

Although I grades are not counted in computing the grade-point average, it is important to remove them quickly. In order to hold an academic appointment, graduate students may have no more than two I grades on their academic records. You should seek the advice of the Graduate Division if you have further questions concerning I grades.

For undergraduate students, an I grade received in the fall semester must be replaced by the first day of instruction in the following fall semester.

An I grade received in the spring semester or Summer Session must be replaced by the first day of instruction in the following spring semester.

When you complete the required work or deferred examination, grade points will be assigned if you receive a grade of A, B, C, or D. If you repeat the course, grade points will then be assigned to the earned grade if the dean has given prior written approval to repeat it. If you repeat the course without the approval of the dean, the I grade will be converted to an F and the repeated course will be treated the same as any other course in which you receive an F. The dean of your college or school may extend the deadline for undergraduate completion of an I grade. For undergraduates, except as noted below, any I grade which has not been replaced within the above deadlines will, at the end of that time, be converted to grade F (or NP if taken passed/not passed). After that time, but not retroactively, the grade is counted in computing your grade-point average.

Exceptions: Within the above deadlines for completing an I grade, undergraduate students may notify the dean that they have not attempted completion and will not complete the work required for removal of the I grade, and may request that the grade not be replaced by an F (or NP). This procedure is limited to a maximum of two courses. Once the decision has been made, it is irrevocable; the course cannot afterward be completed by any means, including repetition of that course or any equivalent course.

If a degree is conferred before the end of the above deadlines following the assignment of an I grade, the grade will not be converted to an F (or NP). However, you still have the option of removing the I grade within the above deadlines.

If you are an undergraduate student with 12 or more units of I on your record, you may not register without the permission of the dean.

All students who receive an I grade must file a Petition for Grade and Grade Points in an Incomplete Course, available at department offices and at the Office of the Registrar, 120 Sproul Hall. You should file the petition with the department in which you received the I grade as soon as you and the instructor have established the date you completed the course. The filing fee is $5, payable at the Registrar’s Office. You must make arrangements to complete the course at least 30 days before the deadline. The final grade cannot be recorded until you have filed the petition with the department and paid the fee.

Note: The I grade is not physically replaced or removed from the academic record. Completion of the work is reflected as a subsequent line entry on the record, and the units and grade points thus earned will be included in the grade-point computations at the close of the next session.
Grade IP (In Progress)

If you take a course extending over more than one term and evaluation of your performance is deferred until the end of the final term, provisional grades of IP (In Progress) are assigned in the intervening term(s). The provisional grades are replaced by one final grade if you complete the full sequence. The grade IP is not included in the grade-point average. Effective with an IP assigned fall 1973 or later, if the full sequence is not completed as scheduled, the IP will be replaced by a grade of Incomplete. Further changes in your record will be subject to the rules pertaining to I grades (see above).

Changes of Grade

All grades except I and IP (see above) are considered final when assigned by an instructor at the end of a term. An instructor may request a change of grade when a computational or procedural error occurred in the original assignment of a grade, but a grade may not be changed as a result of re-evaluation of your work. No final grade may be revised as a result of re-examination or the submission of additional work after the close of the term.

Appeal Process

If you have a grievance about grades, you may appeal. You have grounds for appeal if you feel that considerations of race, politics, religion, sex, or sexual harrassment affected your grades, or that your work was evaluated by other criteria that do not directly reflect your performance of the course requirements. The following formal procedure may not be activated unless you, the instructor in charge, an ombudsperson (or any mutually accepted third party), and the department chair have failed to resolve the dispute informally. The procedure, once initiated, is to be completed at the unit level within 20 days and at the Senate level within 40 days if both parties are in residence and the University is in regular session. The formal process must be initiated within two semesters of the alleged offense.

Appeal of Grades in Courses and Examinations

Each department or other instructional unit, or group of units teaching similar disciplines, must establish a standing Grievance Committee chair. For each case this chair will appoint an ad hoc Grievance Committee composed of three faculty members, only two of whom may be from the same unit, and two students in good standing appointed by the student association(s) of the unit(s). If no student association exists, the students are to be appointed by the ASUC or the Graduate Assembly. (The student members must have passed courses or an examination in the unit(s) at least at the level of the disputed course or examination and have been in residence for at least one year.) If you are dissatisfied with the outcome of the informal discussion, you may submit the case in writing to the Grievance Committee, which will obtain a written response from the instructor and will provide all parties the opportunity to present additional information orally or in writing. The Grievance Committee's recommendation to the Committee on Courses, including minority view, if any, must be given in writing.

If the Committee on Courses finds in your favor, it may change a failing grade to a P or S, drop a course retroactively, retain the course but eliminate the grade from the GPA, or adopt the letter grade, if any, that was recommended by four of the five members of the Grievance Committee of the unit(s).

Repetition of Courses

You may repeat only courses in which you received a grade of D+, D, D-, F, NP, or U. You may repeat an I subject to limitations listed below (see Grade I). Courses in which you received a grade of D+, D, D-, or F and courses that you undertook for a letter grade but for which you received a grade of I may not be repeated on a passed/not passed basis. Repetition of a course more than once requires approval by the dean of the college, school, or division in which you are enrolled at the time you repeat the course. Without this approval, a course repeated more than once will not be included in the grade-point average, but a passing grade in the repeated course will be accepted in satisfaction of unit requirements for the degree. Degree credit for a repeated course will be given only once, but the grade assigned at each enrollment is permanently recorded. If you repeat courses in which you received a grade of D+, D, D-, or F, the units are counted only once and only the most recently earned grades and grade points are used for the first 12 units repeated. In case of further repetitions, the grade-point average is based on all grades assigned and total units attempted. If, however, you receive a grade of I upon repetition of a course, the grade of D+, D, D-, or F will continue to be computed in the grade-point average until the I grade is replaced. If you repeat an I in a letter-grade course, the I will lapse to an F unless you have permission of the dean of your college or school to retain the I grade for a longer period.

Credit by Examination

Undergraduate Students

You may earn credit by examination in two ways:

1. If you are a new or re-entering undergraduate student, on the recommendation of the Board of Admissions you may be allowed credit by examination for knowledge that you acquired since graduation from high school, either by independent study or at another institution, and for which you have not been allowed advanced standing credit. You should apply to the Office of the Registrar for credit.

2. If you are a student in good standing and currently registered in a regular session, you may qualify for
course credit by examination. You may apply for credit to the dean of your college or school on the Petition for Credit by Examination, obtainable from the Office of the Registrar. You may apply for credit by examination in any course listed in the current General Catalog that pertains to the regular sessions at Berkeley. However, the subject in which you want to be examined should be one in which, in the opinion of the instructor in charge of the department, knowledge can be tested by examination. You must file a separate petition for each course for a fee of $5 per course. In certain laboratory, field, or practice courses, neither a written nor an oral examination may be a satisfactory test. You may not receive credit by examination (1) if the credit would duplicate credit that you presented for admission to the University or (2) in elementary courses in your native language if it is not English. The examination must cover the entire course and be administered at one sitting of no longer than three hours. It may be the regularly scheduled final examination for the class, provided that the examination meets the foregoing criteria. The result of the examination may be reported to the Office of the Registrar only as Passed or Satisfactory, according to the regulations governing the assignment of these grades. Further information concerning credit by examination may be obtained from the Office of the Registrar.

Graduate Students
If you are a graduate student in residence, you may petition to receive a limited amount of course credit toward your 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. You must be registered for at least 4 units of upper division and/or graduate course work at the time you take the examination and you must be in good academic standing (3.0 grade-point average or better). The final result of the examination will only be reported as satisfactory or unsatisfactory. You may obtain the petition from the Office of the Registrar. Approval to take these examinations must be given by the dean of the Graduate Division and by the course instructor, or, if no instructor is designated, by the department chair.

Midterm and Final Examinations
The number of midterm examinations varies at the discretion of the instructor. Notices will be sent to undergraduate students whose work at midterm is of D, F, or NP quality. Final examinations are required in all undergraduate nonlaboratory courses, with the exception of courses that the Schedule of Classes indicates do not require a final examination. This requirement allows you to demonstrate mastery of course material while providing the instructor with written evidence for evaluation. You may be re-examined only to complete an incomplete grade, not to raise any other grades. The examination may last no longer than three hours and must be administered at the time announced in the Schedule of Classes. Any deviation from this announced time, including take-home examinations, requires approval from the Committee on Courses. This requirement guarantees you ample prior notice of the examination time and eliminates conflict with other examinations.

Instructors or departments must return your final examinations or copies of them, or retain them for 13 months after the date of the examination. They must give you access to retained examinations under the supervision of the instructor or a designee. You have a right to pay for and keep photocopies of your retained examinations. The department is responsible for ensuring compliance with this regulation for all faculty, including visiting faculty and faculty on leave.

Other Academic Policies

Grade Reports and Transcripts
After grades are recorded for a semester, they are available from Info-BEARS at 642-9400. Official copies of student transcripts also are available from the Office of the Registrar, 120 Sproul Hall. Transcripts for registered students with their grades are available approximately 30 days after the last date for final exams. At times other than the end of the semester, the normal period required for processing and issuing transcripts for both registered and former students is 7 to 10 working days after receipt of your request. The charge for each transcript of every undergraduate, graduate, or separate Summer Session record is $4 per copy. The total amount due must accompany the appli-
Academic Policies

If you urgently need a transcript that would normally take 7 to 10 days to issue, it can be made in 24 hours at a special charge of $10 for each copy. Rush transcripts also can be ordered by mail or by telephone at 643-7490, using your Visa, Mastercard, or Discover Card.

Cal Photo ID Cards
Your Cal photo ID card is your official identification as a student at Berkeley. If you have not already had your photograph taken for the card, you should do so as soon as possible. If you are a newly admitted student, you can have your photograph taken as soon as you receive your Tele-BEARS registration form for the semester. The first card is free; replacement cards are $10 (nonrefundable). For more information, go to the Cal Photo ID Office, Unit 2 Residence Halls East Dining Center, 2650 Haste Street, or call 643-6839.

Change of Name or Address
Changes to your local or permanent address or telephone number can be entered directly on the Bear Facts system (see page 38). You can also change your address at your department or college/school dean’s office or at the Office of the Registrar. If you have changed your name, go to the Office of the Registrar, 120 Sproul Hall, and complete a Change of Name form.

Probation and Dismissal—Graduate Students
Graduate students are subject to probation and dismissal for academic deficiencies at the discretion of the dean of the Graduate Division under the policies established by the Graduate Council of the Academic Senate. Probation may be initiated by the dean of the Graduate Division or by recommendation of the chair of graduate advisers in your major department, school, college, or graduate group. The most common reasons for probation are a low GPA, written work of substandard quality in courses central to your program of study, or failure to make adequate progress toward the degree. Dismissal for academic deficiencies is normally carried out by the dean on the recommendation of the chair of the graduate advisers, but the dean may also initiate dismissal after reviewing your record. You may appeal dismissal from graduate standing. To obtain a copy of the graduate appeals procedures, contact the Graduate Division’s Office of the Dean, 424 Sproul Hall, 642-5472.

Access to Records
You are entitled by law and University policy to examine and challenge most of the records that the University maintains on you. These records are confidential and in most circumstances may be released to third parties only with your prior consent. Such matters are detailed in the Berkeley Campus Policy Governing Disclosure of Information from Student Records, available in the Office of the Registrar, 120 Sproul Hall.

Cancellation or Withdrawal of Registration
If you do not wish to attend the University for a semester and instruction has not yet begun, you must formally request a cancellation of your registration from the University. If instruction has already begun and you find it necessary to stop attending classes, you must formally request a withdrawal from the University. Whether you cancel or withdraw, any classes in which you are enrolled will be dropped from your schedule, and you will no longer be eligible to attend for that semester or any future semester until you are readmitted.

Cancellation
You can cancel your registration via Tele-BEARS or by notifying the Office of the Registrar in writing before the first day of instruction for the semester. To have your cancellation processed electronically, you can also go to your college or school dean’s office (for undergraduates); the Graduate Division, 302 Sproul Hall (for graduate students); or the Office of the Registrar, 120 Sproul Hall.

Withdrawal
You must have your withdrawal approved by an adviser at your college or school dean’s office (for undergraduates) or the Graduate Division, 302 Sproul Hall (for graduate students). Your adviser will process your withdrawal electronically; you do not need to go to the Office of the Registrar to file a petition. If you are withdrawing for medical reasons, you should also contact the University Health Services at the Tang Center, 2222 Bancroft Way. If you are an international student (on an F-1 or J-1 visa), you should also see an adviser at the International House, 2299 Piedmont Avenue. If you have a student loan, you are required to go to the Loans and Receivables Office, 192 University Hall, for an exit interview.
Refunds

Refund amounts are determined by the date on which your cancellation or withdrawal was processed. If you qualify for a refund, it will be mailed to your permanent address. Please ensure that the permanent address in your official University record is correct at the time you cancel or withdraw.

Note: All refunds are applied to students' CARS accounts and may be applied to any outstanding debts. Late fees are not refundable. The amount of refund is based on total fees assessed (not just the amount paid) at the time the cancellation or withdrawal is processed; students who withdraw while participating in the Deferred Payment Plan are likely to have a remaining financial obligation to the University.

If you are receiving financial aid, any refund processed will be first applied to your financial aid accounts, regardless of whether you or the Office of Financial Aid paid your fees. If any portion of your registration, tuition (if applicable), or housing fees has been paid by the University or any outside sources, the refund will be applied directly to the source of those funds. Any remaining balance will be credited to your CARS account and returned to you if you have no other outstanding charges.

If you have student loans, the University will notify your lenders of your cancellation or withdrawal status. Further, federal regulations require the University to apply refunds first to any federal student loans you have for the current semester. This may result in your student loan becoming fully due and payable upon your cancellation or withdrawal, depending on when you cancel or withdraw.

For further information on this policy, contact the Office of Financial Aid, second floor Sproul Hall, 642-6442 (for undergraduates) or 642-0485 (for graduate, law, and optometry students).

Schedule of Refunds for New Students Who Have Had Federal Financial Aid Applied to Their CARS Accounts and Withdraw During Their First Academic Term

<table>
<thead>
<tr>
<th>Days</th>
<th>Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>100%</td>
</tr>
<tr>
<td>8-14</td>
<td>90%</td>
</tr>
<tr>
<td>15-28</td>
<td>80%</td>
</tr>
<tr>
<td>29-35</td>
<td>70%</td>
</tr>
<tr>
<td>36-49</td>
<td>60%</td>
</tr>
<tr>
<td>50-56</td>
<td>50%</td>
</tr>
<tr>
<td>57-63</td>
<td>40%</td>
</tr>
<tr>
<td>64 or more</td>
<td>0%</td>
</tr>
</tbody>
</table>

Schedule of Refunds for All Continuing and Readmitted Students and New Students Who Have NOT Had Federal Financial Aid Applied to Their CARS Accounts

<table>
<thead>
<tr>
<th>Days</th>
<th>Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>100%</td>
</tr>
<tr>
<td>2-11</td>
<td>90%</td>
</tr>
<tr>
<td>12-27</td>
<td>50%</td>
</tr>
<tr>
<td>28-53</td>
<td>25%</td>
</tr>
<tr>
<td>54 or more</td>
<td>0%</td>
</tr>
</tbody>
</table>

Returning to Berkeley

Attending Berkeley After Cancellation

New Students: If you cancelled your registration and wish to attend Berkeley in a future semester, you must submit a new application for admission. Your previous admission status will have no bearing on the decision for admission in the future.

Continuing Students: If you cancelled your registration and wish to attend Berkeley in a future semester, you must submit an Application for Readmission (see “Attending Berkeley After Withdrawal,” below).

Attending Berkeley After Withdrawal

If you withdrew from the University and wish to return in a future semester, you must submit an Application for Readmission, available at the Office of Undergraduate Admission and Relations with Schools, 110 Sproul Hall (for undergraduates) and at Graduate Degrees and Petitions, 302 Sproul Hall (for graduate students). The filing dates are April 15 for the fall semester and August 15 for the spring semester. For more information, see page 36 (undergraduates) or page 52 (graduate students).

Note: If you are an undergraduate in the Colleges of Engineering, Environmental Design, or Letters and Science, you may be subject to a “semester out” rule; consult your college dean’s office for more information.
Graduation from Berkeley

Undergraduate Students

Declaration of Candidacy. If you expect to complete work for your degree by the end of a semester, you must declare your candidacy by entering the appropriate code during the first call to the Tele-BEARS registration system. As an alternative, you may declare your candidacy at the beginning of the semester by completing the appropriate petition in the Office of the Registrar, 120 Sproul Hall, or call 643-6173. You have until the end of the fifth week of classes in which to declare.

Nonregistered students. If you are not registered at the time you want to declare candidacy, you may come in person to 120 Sproul Hall to fill out the form “Candidate for Bachelor’s Degree” or call 643-6173 by the end of the fifth week of classes.

Degree check. The Office of the Registrar will check your records to ensure that you have completed the University requirements (American History and Institutions and Subject A, 120 units, and are in good academic standing) and the Berkeley campus American cultures requirement. Your college or school will check for the fulfillment of major, department, and college or school requirements.

Confirmation of Candidacy. Your Confirmed Class Schedule will indicate whether or not you have been advanced to candidacy. If you think there has been an error, go to 120 Sproul Hall.

Certificate of Completion. A Certificate of Completion is official proof that you have been granted the degree for which you were working. Undergraduates may request a certificate from 120 Sproul Hall, and it will be mailed from four to six weeks after the end of the semester.

Graduate Students

Before a graduate degree can be conferred, candidates must have been advanced to candidacy and complete the master’s thesis or doctoral dissertation and any required comprehensive or oral examinations. For detailed procedures and requirements, see the section “Graduate Education,” beginning on page 49.

Commencement

Commencement exercises to honor students who have earned baccalaureate and graduate degrees and to give recognition and awards to students who are graduating with distinction are held each year in May. Students who have earned their degrees in the previous fall semester or in Summer Sessions are welcome to participate. The ceremonies are held by individual schools or colleges or, in the College of Letters and Science, by individual department. There are about 60 ceremonies each year. The ceremonies consist of speakers and the presentation of degrees and awards and are followed by a reception, sometimes a dance, and for at least one department a picnic and volleyball game.

Students may rent caps and gowns through the ASUC and may make arrangements for photographs to be taken or videotapes made. See your department office for additional information.

Diplomas

Diplomas are not given out at Commencement but are available approximately four months afterward. You may pick up your diploma at 120 Sproul Hall or request that it be sent to you for a mailing fee of $8 domestic and $14 international. The Office of the Registrar will retain diplomas for five years only.

Trivial Pursuit

No. 22

What building on campus is named for a husband and wife who were both leaders in their fields?

(Answer on page 457.)
Student Conduct and Appeals

Student Conduct
When you enroll in the University, you assume an obligation to conduct yourself in a manner compatible with the University’s function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities, and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of Student Activities and Services, 102 Sproul Hall. You should pay particular attention to the booklet Berkeley Campus Regulations Implementing University Policies.

Cheating or Plagiarism
Achievement and proficiency in subject matter include your realization that neither is to be achieved by cheating. An instructor has the right to give you an F on a single assignment produced by cheating without determining whether you have a passing knowledge of the relevant factual material. That is an appropriate academic evaluation for a failure to understand or abide by the basic rules of academic study and inquiry. An instructor has the right to assign a final grade of F for the course if you plagiarized a paper for a portion of the course, even if you have successfully and, presumably, honestly passed the remaining portion of the course. It must be understood that any student who knowingly aids in plagiarism or other cheating, e.g., allowing another student to copy a paper or examination question, is as guilty as the cheating student.

Sexual Harassment Policy
The Berkeley campus actively supports the official policy of the University of California on sexual harassment, which states: “The University of California is committed to creating and maintaining a community in which students, faculty, and administrative and academic staff can work together in an atmosphere free of all forms of harassment, exploitation, or intimidation, including sexual. Specifically, every member of the University community should be aware that the University is strongly opposed to sexual harassment and that such behavior is prohibited both by law and by University policy. It is the intention of the University to take whatever action may be needed to prevent, correct, and, if necessary, discipline behavior which violates this policy.”

The campus has a special complaint procedure designed to facilitate prompt and confidential resolution of sexual harassment complaints. If you believe that you have been a victim of sexual harassment, have questions about the definition of sexual harassment or about the special complaint procedure, or have questions about the interrelationship between the special complaint procedure and other campus procedures, you may address your inquiries to the Title IX Compliance Officer, 643-7985. Copies of the procedure are available in 200 California Hall.

Sexual Harassment/Assault Advocacy and Education Program
The Sexual Harassment/Assault Advocacy and Education Program, coordinated by the campus Women’s Resource Center, provides educational workshops for student groups and confidential advocacy and support for individuals who may have experienced harassment or an assault. Short-term crisis intervention counseling is also available. For further information, call 642-4786. University Health Services also offers sexual assault prevention workshops (642-7202), immediate response to sexual assault (642-6074), and services for recent survivors and those working to recover from a past assault.

Student Grievance Procedure
The Berkeley campus Student Grievance Procedure (Appendix II to the Berkeley Campus Regulations Implementing University Policies) gives you an opportunity to resolve complaints alleging discrimination based on race, color, national origin, sex, handicap, age, and sexual orientation. You may also use the procedure to resolve any complaints you may have alleging that any other rules or policies of the Berkeley campus were inappropriately applied and resulted in an injury to you. The procedure is not applicable to certain kinds of complaints for which other appropriate appeals procedures exist, such as a grade appeal based on the application of nonacademic criteria. (See “Appeal of Grades in Courses and Examinations” on page 81 for a description of the grade appeal process.)

The procedure contains important time limitations and provisions about the interrelationship between this procedure and other campus complaint procedures. Inquiries about this procedure or its interrelationship with other campus complaint procedures may be directed to the Assistant Vice Chancellor of Student Life, 643-9260. Copies of the procedure are available in 102 Sproul Hall.

Graduate students should consult the Graduate Division for information about grievance procedures.
Colleges, Schools, and Interdisciplinary Programs

Through Sproul Plaza passes the daily parade of University life.
Colleges and Schools

Walter A. Haas School of Business

Office: Student Services Wing, 642-7989
Dean: William A. Hasler, M.B.A.
Associate Deans:
Richard A. Meese, Ph.D. (Academic Affairs)
Andrew W. Shogan, Ph.D. (Instruction)
Directors:
David C. Mowery, Ph.D. (Ph.D. Program)
Diane Dimoff, M.B.A. (Evening M.B.A. Program)
David H. Downes, Ph.D. (M.B.A. Program)
To be announced (Undergraduate Program)

Undergraduate Program

The bachelor of science degree in business administration constitutes an important service to the public and the business and government communities and serves as a respected model for other schools in the West. The school’s program is less focused than graduate instruction. Its true distinctiveness resides in the integration of a well-rounded liberal arts education with a professional concentration in business administration. An excellent foundation is also provided for students preparing for graduate professional degrees in business, law, and public policy.

Students are admitted only at junior level. Before applying to the school, you should obtain an Announcement of the Undergraduate Program of the Haas School of Business, available in S450 Student Services Wing. The announcement contains complete information concerning academic qualifications for admission, with details about prerequisites and degree requirements. Because there are many more applicants than spaces available, completion of the prerequisites does not guarantee admission. Requests for advice on programs of study and general information should be addressed to the Walter A. Haas School of Business, University of California, Berkeley; S545 Student Services Wing #1900; Berkeley, CA 94720-1900.

Lower Division. Students preparing for admission to the Undergraduate Business Program may complete required lower division courses in any college in the University, or equivalent courses at other institutions. Counselors in the undergraduate school will assist lower division students in selecting courses prerequisite to the upper division business administration curriculum. Detailed information on required preparation is available in the Announcement of the Undergraduate Program of the Haas School of Business.

Upper Division. Upper division core courses to be taken at Berkeley are:
100—Business Communication
110—Microeconomic Analysis for Business Decisions
111—Macroeconomic Analysis for Business Decisions
120—Introduction to Financial Accounting
123—Managerial Accounting
130—Financial Management
150—Organizational Behavior
160—Marketing
170—Social and Political Environment of Business

Beyond these requirements, additional courses within seven subject matter fields must be taken. Advisers will assist you in the selection of these courses. A minimum of 32 units in upper division business courses is required.

The following subject matter fields are available: Accounting, economic analysis and policy, finance, general management, manufacturing and information technology, marketing, organizational behavior and industrial relations, and real estate and urban land economics.

Graduate Programs

The Haas School of Business offers curricula leading to the Master of Business Administration degree and the Ph.D. degree. The Haas School offers two separate M.B.A. programs: a two-year campus program for full-time students and an evening program for fully employed students (Evening M.B.A.) that takes three years to complete on a part-time basis.

The M.B.A. Program. The Haas School offers a strong general management program that prepares its graduates to understand the economic, social, political, and technological forces driving global competition and to become effective leaders of modern organizations. The school is increasingly well-known nationally and internationally for its focus on international business, innovation and entrepreneurship, and the management of technology.

Unusually flexible in its range of courses and electives for second-year students, the full-time M.B.A. program emphasizes cooperative work in teams and small groups. With approximately 30 percent international students (evenly divided between Europe and Asia) and more than 30 percent women (39 percent entering in 1993), the program reflects the diverse global environment in which its graduates will pursue their careers.

The diverse student body represents 192 colleges and universities, 42 countries, and a wide range of academic and professional backgrounds. There are approximately 450 students in the two-year full-time campus program and 250 students in the Evening M.B.A. program.

The Haas School co-sponsors three concurrent-degree programs:

- J.D./M.B.A. with Boalt Hall or Hastings College of the Law;
• M.B.A./M.P.H. in health services management with the School of Public Health;
• M.B.A./M.A. in Asian studies with the Group in Asian Studies.

In addition, two joint curriculum programs are offered:
• The Management of Technology Joint Program with the College of Engineering leading to a certificate in the management of technology.
• The Real Estate Development Program with the Department of City and Regional Planning and the Center for Real Estate and Urban Economics.

Curriculum. Students in the full-time campus program must complete 52 semester units to graduate: 28 units of core required courses and 24 units of electives. Core courses may be replaced by electives by passing a waiver exam. In the second year, students must complete a 1- or 3-unit applied management project. There is also a two-year residency requirement.

Haas students may apply 6 units of credit toward their degree from courses outside the department, such as languages or law, and they are encouraged to take full advantage of the range of course offerings at Berkeley. More than 6 units can be taken by petition.

Students outside the M.B.A. program may take courses on a space-available basis only. They should consult the M.B.A. office directly before attempting to register for any courses.

Applicants interested in the M.B.A. program for fully employed people should contact the Evening M.B.A. office directly for details on requirements and curriculum.

Exchange Programs. The Haas School offers 12 exchange programs with some of the finest business schools in Europe and Asia. The following European schools participate: London Business School in Great Britain, L’Ecole des Hautes Etudes Commerciales (HEC) outside Paris, the Rotterdam School of Management in the Netherlands, Solvay Business School in Brussels, Koblenz School of Management in Germany, Wirtschaftsuniversitat in Vienna, SDA Bocconi in Milan, and IESE and ESADE in Barcelona. In Asia, we have programs with Keio University in Japan, Chinese University of Hong Kong, and Hong Kong University of Science and Technology. In addition, the Washington Campus Program in our nation’s capital and the MBA Enterprise Corps in Eastern Europe provide Berkeley students with opportunities to enhance their education.

Admission. Applications for the full-time M.B.A. program are accepted for fall entry only. Each year, the school receives approximately 2,100 applications for about 230 positions in the entering class. The average age of entering students is 27.5 years and more than 99 percent have significant full-time business experience before entering the program. Interviews are strongly recommended.

Because admission to the program is extremely competitive, the Admissions Committee uses the following criteria for admission: a superior scholastic performance; a substantial employment history that demonstrates potential for a career in management; and personal attributes that suggest leadership, maturity, interpersonal skills, social and civic responsibility, and goal orientation.

Applicants are strongly urged to submit completed applications as early as possible. Domestic applications are reviewed beginning in November and are evaluated on a rolling basis, generally in the order of their receipt. Early application for international students is especially important since their academic records take longer to evaluate and their applications will be reviewed on a country-by-country basis.

Career Center. Representatives from more than 200 firms recruit at Berkeley each year. In addition to assisting with full-time job placement, the Haas Career Center sponsors a Summer Job Development Program for first-year students.

The Career Center also assists students in choosing and attaining career objectives and in preparing for the job search. This preparation includes workshops on interviewing and writing cover letters and résumés, videotaped mock interviews, and proactive-search seminars.

Campus Visits. The Haas School encourages prospective students to attend information sessions at Berkeley. Organized by first- and second-year students, these presentations cover life in the program from the student perspective. Information sessions are held daily at 1 p.m. throughout the academic year (September through mid-May, with the exception of school
holidays). The sessions last approximately one hour. During a visit, prospective students may arrange to visit classes or request a Dutch-treat lunch with current students. For further information or to arrange for a classroom escort, call 642-5610.

**Applications.** Applications become available around the first of September each year. Requests for application materials to the full-time M.B.A. programs should be addressed to:

Haas School of Business, University of California, Berkeley; M.B.A. Admissions #1902, Berkeley, CA 94720-1902, telephone 642-1405, fax 643-6659, or e-mail: mbaadms@haas.berkeley.edu.

Requests for application materials to be mailed to destinations outside North America must be accompanied by a certified check or international money order in the amount of $11.

**The Evening M.B.A. Program.** The Haas School of Business also offers the M.B.A. program on a part-time basis. This three-year Evening M.B.A. program is available to students who are fully employed and are seeking to add value to their academic background and professional experience while maintaining their current career momentum.

Students entering the program in the fall or spring semesters must have completed five prerequisite courses or their equivalents before enrollment. These prerequisites are introductory courses in microeconomics, macroeconomics, financial accounting, statistics, and a college-level mathematics course. Courses must have been taken within the past seven years, and applicants must have earned grades of B or higher. Admission criteria for the Evening M.B.A. program are identical to those for the full-time M.B.A. program.

Students in the Evening M.B.A. program must complete 36 semester units to graduate: 18 units of required core courses and 18 units of required elective courses. Classes are held on the Berkeley campus Monday through Thursday from 5:45 p.m. to 9:30 p.m. Students attend classes two nights per week and may enroll in day courses on a space-available basis.

**Applications.** The Evening M.B.A. program accepts applications for fall and spring entry throughout the year. Requests for information and application materials should be addressed to:

Haas School of Business, University of California, Berkeley; Evening M.B.A. Program #1906, Berkeley, CA 94720-1906, telephone 642-0292.

**The Ph.D. program** of the Walter A. Haas School of Business is an advanced and scholarly course of study in the functioning of business and its interaction with the environment. It combines an in-depth examination of one or more of the traditional fields of study in business administration with a broader, integrative investigation of basic and applied theory in the social sciences and in quantitative methods. Fields of primary specialization include accounting, business and public policy, finance, marketing, and organizational behavior and industrial relations. Students in any primary specialization may also choose to concentrate in strategy by taking additional course work. The program also enroll students with interests in real estate, provided they take the required course work in either accounting or finance.

The Ph.D. program includes periods of intensive work in formal courses as well as individually developed and executed reviews of special topics and programs of research. It provides the opportunity to work closely with an internationally known faculty both in the classroom and in individual scholarly investigation.

The purpose of the program is to train men and women for careers in the research, study, and teaching of business administration. It is designed to enable students not only to become critically familiar with the sophisticated technical and theoretical disciplines underlying the practice of business administration, but to develop the capacity to contribute to their extension. A distinguishing feature of Berkeley's program is an emphasis on research. Since the end of World War II, the application to business of theory and methodology from the social sciences and quantitative methods from the applied sciences has resulted in an accelerated rate of knowledge acquisition. This change has significantly deepened the sophistication of research work and broadened the range of analytical concepts with which the student in business must be familiar. The intention of the Berkeley faculty is to train students who will take leadership roles in the future expansion and communication of this knowledge.

The teaching and research skills provided by the Ph.D. program have become virtually mandatory for positions in colleges and universities. These skills are also of increasing importance for a small but expanding number of jobs in business and government. These opportunities are likely to be found in consulting, research, and technical advisory firms, with some Ph.D.'s in business administration starting their own companies. While a few may take positions as administrators in large companies, the Ph.D. program is not the best way to prepare for such posts. Those who want a professional degree to prepare them for responsible administrative positions will find the M.B.A. degree the appropriate course of study.

Compared to the Ph.D. programs at most other universities, the Berkeley plan is strongly discipline and research oriented. Emphasis is placed on preparing students to evaluate existing knowledge and to advance the work in their fields through the application of theory from the social sciences, mathematics, or statistics. The importance of quantitative skills in this mix varies by field of study within business administration, but all students must attain sufficient proficiencies to read and keep pace with an increasingly mathematical literature.
Instruction in the program may be separated into three general periods. The first encompasses formal coursework in basic and advanced subjects. The time devoted to these studies, typically two years, depends largely upon a student's prior preparation.

In the second period, directed study, students work closely with faculty members to prepare for research in their selected fields.

In the last period, individual research, students work on their dissertations. Together, periods two and three usually require two to three years to complete.

**Preparation for the Ph.D. Program.** Admission to the Ph.D. program is open to students with an accredited bachelor's degree, or higher, from any field. No preference in admission is given to any previous field of study or to applicants who have had some graduate training. Applicants should possess strong skills in writing and oral communications and have a basic understanding of differential calculus.

Ph.D. applications will be evaluated on the basis of evidence of a high level of scholarly ability in both quantitative and qualitative skills, the motivation to complete a strenuous academic program, and a clear statement of career objectives that are consistent with the Ph.D. degree.

Applications for the Ph.D. program may be obtained by writing to the Ph.D. Program Office, Haas School of Business, University of California, Berkeley; F655 Faculty Wing #1900, Berkeley, CA 94720-1900.

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**College of Chemistry**

Office: 420 Latimer Hall, 642-0473

Dean:
Alexis T. Bell, Sc.D.

Associate Dean (Undergraduate Affairs):
Herbert L. Strauss, Ph.D.

Assistant Dean (Services):
K. Peter C. Vollhardt, Ph.D.

The College of Chemistry comprises two departments, the Department of Chemical Engineering and the Department of Chemistry. Both disciplines provide the opportunity for having an impact on a number of major world problems. Overcoming the energy shortage, recovering and utilizing dwindling mineral resources, developing new drugs and food supplies, understanding and protecting the environment, and synthesizing new products biochemically all depend centrally upon chemistry and chemical engineering. Students entering these fields will spend their careers in the middle of the action on these and other highly important areas of research.

Both departments in the College of Chemistry rank among the most prominent in their fields and both are renowned for their breadth of activity in a diverse range of subdisciplines and applications. At the same time, with only two departments, the college is a relatively small and comfortable place in which to work. Faculty members have many demands on their time, but students are able to develop close and satisfying contacts with them while in the college.

The college offers programs leading to the B.S., M.S., and Ph.D. degrees in both chemistry and chemical engineering. The B.S. degree in chemistry is intended for students who are primarily interested in careers as professional chemists or wish a thorough grounding in chemistry in preparation for professional school. The B.S. degree in chemical engineering is intended as preparation for a career in chemical engineering and related disciplines. Chemical engineering majors specialize in one of six interdisciplinary options: applied chemistry, applied physics, biotechnology, chemical processing, environmental technology, or materials science. The College of Letters and Science offers a chemistry major leading to an A.B. degree through a curriculum with a greater proportion of courses in the humanities and social sciences than is included in the B.S. chemistry program. It is intended for students interested in careers in teaching, medicine, or other sciences in which a basic understanding of chemical processes is necessary. Also, two B.S. degree double major programs (Chemical Engineering and Materials Science and Engineering, and Chemical Engineering and Nuclear Engineering) are available.

Advanced undergraduate and graduate students have opportunities to conduct research in synthetic and structural chemistry of organic and inorganic compounds, chemistry of natural products, theoretical chemistry, nuclear chemistry, physical chemistry, bio-physical chemistry, solid-state and surface chemistry, catalysis, process design and control, polymers, food processing, and biochemical engineering.

Recommended high school preparation for chemistry or chemical engineering should include chemistry (1 year); physics (1 year); mathematics (4 years, including trigonometry, intermediate algebra, and analytic geometry); and a foreign language (2 years, preferably German, Russian, or French).

For a more specific description of the programs for the various degrees, as well as options of specialization, see the Announcement of the College of Chemistry.

**Organizational Units**

**Chemical Engineering**
Department Office: 201 Gilman Hall, 642-2291

**Chemistry**
Department Office: 419 Latimer Hall, 642-5882
Graduate School of Education

Office: 1600 Tolman Hall, 642-5345
E-mail: gse_info@uclink.berkeley.edu
http://www-gse.berkeley.edu

Dean:
Eugene E. Garcia, Ph.D.

At the Graduate School of Education, faculty and students work together to advance the theoretical base of education. They tackle issues of fundamental importance, both inside and outside of school settings, promoting the improvement of educational practice. To accomplish this, the Graduate School of Education makes use of a coherent, integrated, and collaborative set of strategies emphasizing excellence in scholarship, teaching, and professional development, with the goal of enhancing opportunity for all.

Several aims guide these efforts: 1) addressing the challenge of diversity; 2) understanding fundamental literacies (linguistic, mathematical, scientific, and technological) and how to foster them; and 3) developing and elaborating theories of thinking, learning, and teaching in complex social contexts, including homes, schools, and workplaces.

Those involved in the field of education are now immersed in a complex set of challenges—locally, regionally, nationally, and internationally. At no other time have we faced the substantive challenge of merging issues of equity and excellence in such a dramatic way.

Not only are many of you familiar with these challenges, but you value and welcome them. Our commitment to ensure that all students have a successful educational experience will help other educators and community members embrace these challenges.

The school offers programs that lead to advanced degrees in education: the M.A., the Ph.D., and the Ed.D. In addition, the school grants credentials to professionals who plan to work in the schools as teachers and school psychologists.

The Graduate School of Education includes three academic groups: 1) Cognition and Development; 2) Education in Language, Literacy, and Culture; and 3) Policy, Organization, Measurement, and Evaluation. There is also a program in Social and Cultural Studies in Education. Each specialization represents an approach to the study of education or a substantive area of educational study.

Cognition and Development (CD) is a union of intellectual perspectives regarding development, cognition, and learning in particular content domains. Work under the broad umbrella of Cognition and Development involves the basic study of human and moral development and the investigation of conceptual growth, with an emphasis on learning in mathematics and science. Applications of these ideas include the development of curricula, technologies for learning, and assessment materials. This group includes the following programs: Developmental Teacher Education; Education in Mathematics, Science, and Technology; Human Development in Education; the Joint Doctoral Program in Special Education; Master’s and Credential in Science and Mathematics Education; and School Psychology.

The faculty in Education in Language, Literacy, and Culture (ELLC) are committed to three fundamental activities: 1) the preparation of language, literacy, and culture researchers and educators who will serve as research leaders in higher education and agents of change in public education; 2) the construction of new knowledge about the acquisition, use, and purposes of literacy and language in schools, communities, and society; and 3) participation in educational activities at the local, state, and national levels in order to help shape policy and practice. The group offers these programs: Language, Literacy and Culture, leading to either the M.A., the Ph.D., or the Ed.D. degree; the CLAD English Credential Program; and the M.A. in Reading/Reading and Language Arts Specialist Credential Program.

Programs in Policy, Organization, Measurement, and Evaluation (POME) emphasize the study of schools as institutions, the formulation and the effects of educational policy, and the methodology of research, measurement, and evaluation in education. The POME faculty group has strengths and interests that combine: 1) a focus on the institutions of schooling, analyzed from various disciplinary perspectives including sociology, economics, history, and philosophy; 2) experience in linking research, policy, and practice at the national, state, and local levels; and 3) a breadth and depth of methodological, measurement, and evaluation expertise. Four programs are offered: Educational Leadership, Policy Research, Program Evaluation, and Quantitative Methods in Education.

The program in Social and Cultural Studies in Education (SCS) involves social and cultural analysis and social theory. The program is interdisciplinary. It combines anthropology, sociology, history, and philosophy—not as separate disciplines, but in their complex interaction. The faculty have special interests in research that expands our understanding of what constitutes educational sites and practices, especially in culturally central places of work. The faculty also are deeply involved in exploring the role of educational practices of all kinds in the production and reproduction of poverty and inequalities of race, gender, and social class.

For details about the school's programs and information concerning admissions requirements and procedures, please visit our home page on the World Wide Web at http://www-gse.berkeley.edu. Printed information is available in the Announcement of the Graduate School of Education, which you can obtain by writing...
or visiting the Graduate School of Education, University of California, Berkeley, 1600 Tolman Hall #1670, Berkeley, CA 94720-1670. You can also reach the school by e-mail at gse_info@berkeley.edu or by phone at 642-5345.

Undergraduate Minor

The undergraduate minor in education requires the completion of five courses in the School of Education. Required courses include Education 190 (Current Issues in Education) and an approved section of Education 97/197 (Fieldwork in Education), or Education 114C (Practicum in Early Development and Education). In addition, students select three electives from the School of Education's course offerings. A list of courses approved for the minor is posted each semester in 1600 Tolman Hall.

For more information regarding this program, please come to 1600 Tolman Hall to pick up a handout describing the minor and its requirements, and to speak to the undergraduate minor adviser.

The college includes the departments of:
- Civil and Environmental Engineering
- Electrical Engineering and Computer Sciences
- Industrial Engineering and Operations Research
- Materials Science and Mineral Engineering
- Mechanical Engineering
- Naval Architecture and Offshore Engineering
- Nuclear Engineering

Each department with its degree programs is listed separately in alphabetical order in this catalog. There are also separate listings for programs in:
- Applied Science and Technology
- Bioengineering
- Biophysics
- Engineering—Double Majors
- Engineering Science
- Manufacturing Engineering
- Manufacturing Engineering

Additional sections of interest are:
- Engineering courses
- Engineering—Interdisciplinary Studies
- Interdepartmental Studies courses
- Chemical Engineering (part of the College of Chemistry)
- Computer Science (part of the College of Letters and Science)

Undergraduate Programs

The college offers programs in a wide variety of engineering fields. These programs are based on the concept that the engineer must be well-grounded in the sciences, humanities, and social studies, with full command of the principles and practices of the engineering profession.

Four-year undergraduate curricula are offered in the following professional fields: civil engineering, electrical engineering, computer science, industrial engineering and operations research, mechanical engineering, mineral engineering, and nuclear engineering. All are accredited by the Accreditation Board for Engineering and Technology, Inc. Programs are also offered in manufacturing engineering, materials science, and earth resources engineering. Each of the curricula is administered by a department within the college and each emphasizes a core program of science and engineering subjects related to the particular field. In addition, there is a curriculum in engineering science with programs in bioengineering, engineering mathematics and statistics, engineering physics, and environmental engineering science. Engineering science—undeclared is available to freshman applicants as an admissions option. Five double major programs
At Berkeley, you begin to understand a lot about different cultures. Last year, as a first-year student, I'd stay up until 3 or 4 in the morning just talking to people. It's interesting when you hear and learn about other people. That's what I feel the college experience is, meeting new people and getting to know about their lives.

2nd-year student

within the college are offered. These are nuclear engineering or materials science and engineering combined with either mechanical engineering or electrical engineering and computer sciences; and materials science and engineering combined with nuclear engineering. In addition to these five programs, double major programs in chemical engineering combined with materials science and engineering or nuclear engineering are offered jointly by the College of Chemistry and the College of Engineering.

Admission to an engineering double major is open to transfer students. Admission is closed to entering freshmen. Continuing students may petition for change to a double major in the final semester of their sophomore year. Students interested in the double majors with chemical engineering must apply for admission to the College of Chemistry.

The College of Engineering offers a series of courses in energy engineering open to junior and senior engineering students and qualified students in other fields. These courses are listed under “Engineering” and are sponsored by individual departments or groups of departments as indicated. The courses are intended to provide a sound introduction to the identification and analysis of concerns related to energy. These courses include nuclear fission and fusion and hydroelectric power generation; geothermal, tidal, and solar power; direct energy conversion; and air pollution.

Degree Requirements. Engineering students must fulfill University of California, Berkeley campus, and College of Engineering requirements to graduate. The unit requirement for the bachelor’s degree is normally 120 semester units, within which the student is expected to satisfy graduation requirements. This minimum may be exceeded for valid reasons. To exceed 125 units, prior approval of the dean is required for registration.

Admission Requirements. Entering freshmen should have completed the following subjects:

High School Subjects and Units:

*United States history*—1 (one year of United States history or one-half year of United States history and one-half year of civics or American government.)

*English*—4

*Mathematics*—4

*Physics*—1

*Chemistry*—1

*Foreign language*—2

*Other college preparatory subjects*—2

**Total units**—15

Graduate Programs

Graduate programs are offered leading to the Master of Science and Doctor of Philosophy degrees for study emphasizing engineering and applied sciences, and Master of Engineering and Doctor of Engineering degree programs emphasize advanced professional studies of design development. Fields of study include civil and environmental engineering, electrical engineering and computer sciences, industrial engineering and operations research, mechanical engineering, nuclear engineering, ceramic engineering and metallurgy, materials science and mineral engineering, petroleum engineering and geoenineering, fluid mechanics, applied mechanics, and naval architecture and offshore engineering. Interdisciplinary graduate programs are also available in the fields of bioengineering, biophysics, ocean engineering, plasmas, environmental engineering, applied science and technology, management of technology, robotics and manufacturing, fire safety engineering science, surface and subsurface hydrology, and rock mechanics.

Concurrent degree programs provide a broad, integrated curriculum between two disciplines. Degrees awarded are an M.Arch. in Architecture with an M.S. in Civil and Environmental Engineering (Structural); an M.C.P. in City and Regional Planning with an M.S. in Civil and Environmental Engineering (Transportation); and an M.P.P. in Public Policy with an M.S. in an engineering department.

More information will be found in the engineering sections of this catalog and in the Announcement of the College of Engineering. The announcement is available from the College of Engineering, University of California, Berkeley; 308 McLaughlin Hall #1702, Berkeley, CA 94720-1702, or from any organizational unit listed below.

Organizational Units

Civil and Environmental Engineering

Department Office: 760 Davis Hall #1710, 642-3261

Chair: David B. Ashley, Ph.D.

Electrical Engineering and Computer Sciences

Department Office: 231 Cory Hall #1770, 642-3214

Chair: Randy Katz, Ph.D.

Associate Chair: Andrew R. Neureuther, Ph.D.

Computer Science Division

Division Office: 389 Soda Hall #1776, 642-1024

Vice Chair: Robert Wilensky, Ph.D.

Industrial Engineering and Operations Research

Department Office: 4135 Etcheverry Hall #1777, 642-5484

Chair: Candace A. Yano, Ph.D.

Materials Science and Mineral Engineering

Department Office: 577 Evans Hall #1760, 642-3801

Chair: Thomas M. Devine, Jr., Ph.D.
Mechanical Engineering
Department Office: 6189 Etcheverry Hall #1740, 642-1338
Chair: David B. Bogy, Ph.D.

Naval Architecture and Offshore Engineering
Department Office: 202 Naval Architecture Building #1780, 642-5464
Chair: Ronald W. Yeung, Ph.D.

Nuclear Engineering
Department Office: 4153 Etcheverry Hall #1730, 642-5010
Chair: William E. Kastenberg, Ph.D.

Interdisciplinary Studies
Program Office: 230 Bechtel Engineering Center #1708, 642-8790
Associate Dean: James Casey, Ph.D.

The College of Environmental Design combines in a single academic unit professional instruction in architecture, city and regional planning, landscape architecture, and environmental planning, along with related undergraduate and advanced graduate instructional programs. In addition to preparing students in these three professions, the college is committed to improving practice, contributing to basic knowledge, and addressing ethical issues in areas related to the built environment and its natural setting. To this end, instruction, service, and research programs in this college aim at educating people to build more efficiently, more beautifully, and in ways better fitted to the multiplicity of human, social, and ecological needs.

The college consists of three departments: Architecture, City and Regional Planning, and Landscape Architecture and Environmental Planning. Undergraduate degree programs in architecture and landscape architecture offer unusual learning opportunities that combine general education, basic skills, and knowledge in the professional fields, with a broad introduction to the built and natural environments. All three departments offer undergraduate minor programs that are open to students majoring in other fields. No undergraduate major or minor programs are professionally accredited by their respective professions. At the graduate level, each department offers the professionally accredited master’s degree. A unique interdisciplinary program offers a master’s degree in urban design. And each department provides advanced graduate work leading to the Ph.D.

Undergraduate Programs
Undergraduates enroll in a four-year curriculum leading to the Bachelor of Arts (A.B.) degree with a major in architecture, landscape architecture, or an individual major. These curricula provide a broad educational base and preprofessional competency in environmental design fields. In addition, they serve as undergraduate preparation for graduate education both in the design fields and, with properly selected elective courses, in other fields such as business, law, and engineering. Graduates also work in related fields such as urban development, real estate, construction, etc.

Most states require that an individual intending to become an architect hold an accredited professional degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board (NAAB): (1) the Bachelor of Architecture, which requires a minimum of five years of study (not offered at Berkeley), and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor’s degree or two years following a related preprofessional bachelor’s degree. These professional degrees are structured to educate those who aspire to registration or licensure as architects.

The four-year, preprofessional degree, where offered, is not accredited by the NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program or for employment options in architecturally related areas.

Admission. High school preparation for the college should include four years of mathematics, one year of physics, and one year of biology or other natural science. Additional preparation could include freehand drawing or introductory drafting. Transfer applicants who have completed 60 semester units should have completed the prerequisite course work described in the College of Environmental Design announcement. As transfer admissions become increasingly competitive, the college consistently retains those applications that demonstrate the most complete academic preparation (the fewest prerequisite courses either lacking or in progress) and the highest level of scholastic achievement (indicated by the applicant’s GPA). Enrollment in the college beyond 130 semester units is not usually permitted; consequently, California community college transfer students may receive up to 70 semester units of transfer credit. Units above 70 receive no credit. Transfer students from four-year institutions who have credit for more than 86 semester units are not normally admitted to the undergraduate program. An undergraduate major in architecture or landscape architecture is not a prerequisite for admission to graduate study in these fields.

Degree Requirements. The A.B. degree programs in the college require the completion of 120 units distributed according to regulations that appear in the College...
of Environmental Design announcement, available from the Undergraduate Dean's Office, University of California, Berkeley, 232 Wurster Hall #1800, Berkeley, CA 94720-1800.

Minor Programs. The College of Environmental Design offers several minors. Minors consist of at least five upper division courses as an optional program with two objectives: to encourage coherence in course work taken outside the major, and to give recognition to the work when it is completed. The following minors are currently being offered to all majors: city and regional planning, ecological design, environmental design in developing countries, history of the built environment, landscape architecture, and social and cultural factors in environmental design. The architecture minor is open to landscape architecture and civil engineering majors only. The landscape design minor is open to architecture majors only. For further information, contact the Undergraduate Office, 232 Wurster Hall.

Information on the courses and degree programs in architecture, city and regional planning, environmental design, and landscape architecture can be found in those sections of this catalog, as well as in the College of Environmental Design announcement.

Graduate Programs
Architecture, City and Regional Planning, and Landscape Architecture each offer accredited professional master’s degree programs that serve as the basic credential for professional practice in the respective fields. The departments also have concurrent and joint degree programs that combine professional degrees in two fields either within the college or with other professional schools. An M.A. degree in design is offered for a very few students, and an interdisciplinary program offers a master’s degree in urban design.

The three departments have advanced graduate programs leading to the Ph.D. degree for students who have the capacity to engage in research and teaching. A research M.S. degree in architecture also is available. These programs have limited enrollments and are not regarded as advanced degrees for professional practice.

Organizational Units
Architecture
Department Office: 232 Wurster Hall, 642-4942
Graduate Office: 370 Wurster Hall, 642-5577
Chair: Donlyn Lyndon, M.F.A., F.A.I.A.

City and Regional Planning
Department Office: 228 Wurster Hall, 642-3256
Graduate Office: 228 Wurster Hall, 643-9440
Chair: Michael Southworth, Ph.D., M.C.P.

Landscape Architecture and Environmental Planning
Department Office: 202 Wurster Hall, 642-4022
Graduate Office: 206 Wurster Hall, 642-2965
Chair: Michael M. Laurie, M.L.A.

School of Information Management and Systems
Office: 102 South Hall, 642-1464
Dean: Hal R. Varian, Ph.D.

The information revolution has created the need for a new kind of professional: someone who is skilled in locating, organizing, manipulating, filtering, and presenting information. The mission of the School of Information Management and Systems (SIMS) is to educate such information managers.

Information managers must be familiar with the technology used to store, organize, and retrieve information in business, government, libraries, and academic settings. However, technical expertise alone is not sufficient for success; SIMS graduates will be expected to not only manage technology but to manage information and people as well.

Today’s information managers will need to understand how to organize information and design front ends to information systems that allow for efficient and effective user interaction. They will need management skills to direct the development and deployment of software systems; and they must be able to assure the quality of information and its value to those who will use it for decision making. Most importantly, they will need to understand the economic and social environment in which their organization functions and be familiar with the relevant issues in law, economics, ethics, and management.
The Masters in Information Management and Systems

The Master of Information Management and Systems is a 42-unit, two-year program designed to train students in the skills needed to succeed as information professionals. Such professionals must be familiar with the theory and practice of storing, organizing, retrieving, and analyzing information in a variety of settings in business, the public sector, and the academic world. SIMS graduates will be expected to perform and manage a multiplicity of information-related tasks. Such a profession is inherently interdisciplinary, requiring aspects of computer science, cognitive science, psychology and sociology, economics, business, law, and communications.

The first year of the program will consist of a core curriculum with course work in organization of information and database design, analysis of information-seeking behavior and needs assessment, technical and social aspects of the telecommunications infrastructure, and project design and management. The second year will involve further study in the core areas along with additional electives, with the expectation that the student will specialize in particular aspects of information management and systems. During the summer between the two years, students will be able to participate in an internship program in order to use their newly acquired skills in real-world settings. Internships will be arranged in corporate, government, and nonprofit settings.

The Ph.D. Program

The doctoral program is a research-oriented program in which the student chooses specific fields of specialization, prepares sufficiently in the literature and research of those fields to pass written and oral examinations, and completes original research culminating in the written dissertation. The degree of Doctor of Philosophy is conferred in recognition of a candidate's grasp of a broad field of learning and distinguished accomplishment in that field through the contribution of an original piece of research revealing high critical ability and powers of imagination and synthesis.

A minimum of two years, or four semesters, in academic residence is required for the Ph.D. There are few specific unit requirements to fulfill, beyond introductory seminars in the student's specific field of interest. Fields of study for the Ph.D. follow:

- Information users and society
- Organization and representation of information
- Management of information organizations and services
- Economics of information
- Information retrieval
- Information technology
- Systems analysis, design, and implementation
- Information policy
- Law and information management

Graduate School of Journalism

Office: 121 North Gate Hall, 642-3383
Dean: Orville Schell, M.A.
Associate Dean: Thomas C. Leonard, Ph.D.

The goal of the Graduate School of Journalism is to produce professional journalists who move on to positions of leadership and influence in American journalism. The Master of Journalism (M.J.) program provides intensive training in journalism skills and a knowledge of the traditions and principles of the field. A professional project or thesis is required to complete the two-year program. The program is rooted in the idea that the best possible preparation for careers in journalism is a sound liberal arts education followed by training in journalism at the graduate level. Concurrent degree programs with Law, Asian Studies, and the Center for Latin American Studies are available.

The school offers specialties in print and in broadcasting. Everyone must take a focused and demanding core course which stresses reporting and writing skills. This is because members of the faculty believe that the best way to train students for careers in journalism is to place them under the supervision and guidance of seasoned journalists in small classes, give them instruction in the skills and attitudes of the craft, and intensive practice in reporting, writing, and editing. Professors give exhaustive critiques of students' work.

Beyond the core course, there are courses in specific areas, such as political, business, science, and cultural reporting. There are also courses stressing different techniques, such as investigative reporting and magazine reporting. The curriculum also includes courses in copy editing and photography and a sequence of courses in television and radio reporting.

Another group of courses is intended to increase understanding of the role of journalism in society. There are courses in the history of journalism, legal aspects of the media, journalistic ethics, and the literature of journalism.

Candidates for the M.J. degree are expected to complete their work for the degree in four semesters. They must complete 36 units in approved upper division and graduate courses, of which at least 24 must be in graduate courses in journalism, and must present an acceptable thesis project. Students are encouraged to take about one-third of their courses in disciplines other than journalism.
Applicants for graduate study should hold a bachelor’s degree comparable to that given by the University of California. Requirements and procedures are outlined in the brochure Graduate Application, Fellowship, and Financial Aid, available at the Office of the Dean of the Graduate Division, and in the Announcement of the Graduate School of Journalism.

The Graduate School of Journalism offers several courses for undergraduates, ranging from small writing and reporting seminars to large lecture courses.

Further information, application requirements, and copies of the Announcement of the Graduate School of Journalism are available from the Journalism Office, North Gate Hall.

School of Law

Office: 215 Boalt Hall, 642-1741
Administrative Officers:
Dean: Herma Hill Kay, J.D.
Associate Deans: James E. Crawford, J.D.
Harry N. Scheiber, Ph.D.
Assistant Deans: Leslie Oster, J.D.
Sue Ann L. Schiff, J.D.
Lujuana Treadwell, J.D.
Vice Chair, Jurisprudence and Social Policy: Charles J. McClain, Jr., Ph.D., J.D.

The School of Law (Boalt Hall) has a three-year curriculum leading to the Juris Doctor (J.D.) degree. Educators at Boalt are faced with the varied needs of teaching students not only to understand legal doctrine but the forces that shape it, of providing experience in the basic working skills of the lawyer who must be able to grow and function for a half century in a constantly changing legal system, and of preparing students for the inevitable policy-making roles lawyers are called upon to fill in a complex world. To this end, Boalt’s curriculum is constantly undergoing reexamination and evolution. It currently includes concentration programs in Criminal Justice and Public Policy, Environmental Law, International Law and Comparative Legal Studies, Law and Technology/Intellectual Property, and Traditionally Disadvantaged Groups. A number of concurrent degree programs also are available with other Berkeley campus graduate departments and with the Kennedy School of Government at Harvard University and The Fletcher School of Law and Diplomacy at Tufts University. The school is a member of the Association of American Law Schools and is approved by the American Bar Association. Its graduates are qualified to become applicants for admission to practice in any state of the United States.

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

The school also offers programs, mainly for foreign-educated attorneys, that lead to the degree of Master of Laws (LL.M.) or the degree of Doctor of the Science of Law (Juris Scientiae Doctor, J.S.D.).

The school does not offer a part-time or an evening program. It admits an entering class once a year for the fall semester. The first-year curriculum is prescribed; the second and third years’ courses are elective.

Graduate Program in Jurisprudence and Social Policy. The School of Law offers a graduate program in Jurisprudence and Social Policy, leading to M.A. and Ph.D. degrees, that is unique in legal education.

The program is founded on two related convictions: (1) legal scholarship should have intimate connections with the social sciences; and (2) education in a law school should not be confined to the professional training of future lawyers.

The program is multidisciplinary, involving faculty from Law and a variety of humanities and social science disciplines, including economics, criminology, history, philosophy, political science, and sociology. It is designed for students who are interested in careers in teaching, research, policy analysis, or public administration.

Study for a degree in Jurisprudence and Social Policy may be combined with study for a J.D. degree. Further information on admission procedures and program requirements may be obtained from the graduate assistant, JSP Program.
The College of Letters and Science offers undergraduate students a variety of programs leading to the Bachelor of Arts degree in four academic years of full-time study.

The first two years are a time of exploration, experimentation, and decision. In the last two years students confirm the decision and acquire and refine special knowledge, usually in their major departments. The college’s departments are devoted to instruction and refined development of a set of structured ideas. The subjects of the departments overlap and complement one another.

**Requirements for Admission in Advanced Standing**

Students applying for admission will not be considered if they have completed more than 80 semester (120 quarter) units. The dean of the college makes exceptions to this policy only in unusual circumstances. Applicants with advanced-placement credit may, however, exceed the 80-semester-unit limitation by the amount of their advanced-placement credit and be admissible if they meet all other admission criteria.

In computing the number of units which they have completed, students should be aware that the College of Letters and Science does not grant unit credit for courses completed in a two-year college after a total of 70 semester units has been completed. Subject credit toward completion of college requirements is, however, granted for appropriate courses.

Transfer students with 56 or more semester units are expected to have satisfied, before admission to the college, the reading and composition breadth requirement, the foreign language breadth requirement, and the quantitative reasoning breadth requirement of the college. Students who apply as intercampus transfers and who have completed all the Letters and Science breadth requirements, or the general education requirements, or the equivalent of either, at the University of California campus from which they transfer may, upon petition, be credited with having completed the breadth requirements of the college. Transfer students who apply from community colleges in California have the option of fulfilling lower division breadth requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC). This program specifies a series of subject areas and types of courses which, if completed before transfer, will satisfy the lower division breadth and general education requirements at any general campus of the University of California.

**Note:** In recent years, all major programs have turned away qualified applicants because of space limitations. Transfer applicants should be aware that admission to all majors in the college is competitive.

**Biological Sciences Majors.** Students planning to declare majors in a biological science must in addition have completed the minimum subject preparation in the major with a grade-point average of 2.00 (C average) or higher. The subject preparation listed below is minimal; transfer students who wish to declare a major in a biological science are urged to consult directly with the department or program in which they are interested to learn of additional requirements or of any restriction placed on entry to the major. The subject preparation for majors in the biological sciences is as follows:

- **Students who have completed 56 to 70 semester units:**
  1. General chemistry with laboratory (equivalent to one year of Berkeley’s inorganic chemistry with laboratory).
  2. General biology with laboratory (equivalent to Berkeley’s Biology 1A-1B).
- **Students who have completed 71 to 80 semester units must complete in addition to points 1 and 2 above:**
  3. Introductory organic chemistry with laboratory (equivalent to Berkeley’s organic chemistry with laboratory).

**Requirements for the Bachelor of Arts Degree**

Students must complete a minimum of 120 semester units, distributed according to regulations which appear in the College of Letters and Science’s *Guide to Earning Your Degree*. A 15-unit class schedule per semester is considered to be a normal course load; a class list of fewer than 13 units requires the special permission of the dean. There are also scholarship, minimum-progress, residence, breadth, and major requirements; these are described in the announcement as well. Brief descriptions of the breadth, major, and minor requirements appear below. Major and minor programs are outlined under the department, field, or group headings in this publication. In addition, students must satisfy the University requirements in Subject A, American History, and American Institutions, and the Berkeley campus American cultures requirement.
Breadth Requirements. There are four breadth requirements:

1. Reading and Composition. Students must normally complete the first half of the requirement (an “A” course) during the freshman year and the second half of the requirement (a “B” course) during the sophomore year. Students must complete the requirement through course work according to the requirements of the semester system, whether the course work is undertaken at Berkeley or elsewhere.

2. Quantitative Reasoning. This requirement may be fulfilled by satisfactory performance in an examination or by successful completion of an acceptable college course. Information about acceptable examinations and acceptable courses is included in the announcement. This requirement, if satisfied by course work, must be completed without delay.

3. Foreign Language. This requirement assures that students who graduate from the college will have some knowledge of the language of a culture other than their own. Students who have not satisfied the language requirement at the time of admission must complete it without delay. The requirement may be satisfied by (a) completion of the third year of one foreign language in high school with a minimum grade of C-, (b) by completion of the second semester of a Berkeley course, or its equivalent elsewhere, in one foreign language with a minimum grade of C-, or (c) by demonstration of equivalent knowledge through examination, including the College Entrance Examination Board Achievement Test, the CEEB Advanced Placement Examination (if taken before admission to the college), or an acceptable foreign language placement examination offered by a foreign language department at Berkeley or on another campus of the University of California. The college will accept in completion of the requirement appropriate work in two foreign languages (with minimum grades of C-) only if that course work was completed before fall semester 1983 and if the course work was accepted by the college in satisfaction of the foreign language breadth requirement under the quarter system.

4. Seven-Course Breadth Requirement
The seven-course breadth requirement took effect in fall 1994 for students who began their studies at Berkeley in lower division standing, and it will take effect in fall 1996 for transfer students admitted in advanced standing (56 or more units). Each student subject to the seven-course breadth requirement must take one course from each of the following categories, with no more than two courses in the same department:

- one course in physical science;
- one course in biological science;
- one course in arts and literature;
- one course in historical studies;
- one course in philosophy and values;
- one course in international studies (lower division language instruction excluded) or participation in the University of California Education Abroad Program or a recognized equivalent; and
- one course in social and behavioral science.

These courses may be taken from the College of Letters and Science and the professional schools and colleges and may be spread over the four years of college attendance. See the College of Letters and Science’s Guide to Earning Your Degree for details and a list of the approved courses that you may take to fulfill the requirement.

Six-Course Breadth Requirement
Students who were admitted to Berkeley before fall 1994, or before fall 1996 with 56 or more transfer units, must complete at least six courses outside the major, for a minimum total of 16 units. The fields of knowledge are defined as the humanities, the natural sciences, and the social sciences. You may satisfy the requirement over the four years of college attendance and include courses from the College of Letters and Science and the professional schools and colleges.

Please see the College of Letters and Science’s Guide to Earning Your Degree for details and a list of the approved courses that you may take to fulfill this requirement.

Major Programs. All students must pursue and complete a major program, the object of which is to provide them with a limited experience in specialization. There are more than 60 departmental major programs ranging from the humanities (e.g., art, comparative literature, English, foreign languages, etc.) and the social sciences (e.g., anthropology, economics, geography, psychology, etc.), to the biological sciences (e.g., integrative biology, molecular and cell biology) and the physical sciences (e.g., geology, mathematics, statistics, etc.). In addition, there are group majors in American studies, Asian studies, Celtic studies, cognitive science, development studies, Dutch studies, environmental sciences, ethnic studies, film, Latin American studies, legal studies, mass communications, Middle Eastern studies, peace and conflict studies, political economy of industrial societies, religious studies, and social welfare. There are also field majors in the physical sciences and interdisciplinary studies. Moreover, students who have completed at least 60 semester units and at least one semester of enrollment at Berkeley, and who have attained a minimum 3.0 Berkeley and overall grade-point average may, with the permission of the dean and support and supervision of a college faculty member and a faculty member who acts as second reader of the individual major thesis, pursue an individual major designed to satisfy special academic goals. Thus, the options available to students outside traditional disciplines are many and varied.
Minor Programs. Minor programs are intended as optional programs that will encourage coherence in the work that students undertake outside their major field(s) of study. Students may complete one or more minor programs, normally in a field both academically and administratively distinct from their major. The college has set the following minimum requirements for completion of a minor program:

1) Course requirements: a minimum of five upper division courses, completed on a letter-graded basis, are required for the minor. At least three of the five upper division courses must be completed at Berkeley.

2) Grade-point average requirements: Students must maintain a minimum overall grade-point average of 2.0 in upper division courses required for the minor program. At present the college offers minor programs in the following departments:

- African American Studies
  - Humanities Minor
  - Social Science Minor
- Art, History of
  - Asian Studies
    - Minor in Chinese Studies
    - Minor in Japanese Studies
    - Minor in Southeast Asian Studies
- Celtic Studies
- Classics
  - Minor in Greek
  - Minor in Latin
  - Minor in Classical Civilization
- Demography
- Dramatic Art/Center for Theater Arts
  - Dramatic Art
  - Dramatic Art – Dance
- Dutch Studies
- English
  - American Literature
  - Literature in English
- Ethnic Studies
  - Asian American Studies
  - Chicano Studies
  - Ethnic Studies
  - Native American Studies
- French
  - French Civilization
  - French Language Studies
  - French Literature
- Geography
- German
- Italian Studies
- Mathematics
- Music
- Near Eastern Studies
  - Ancient Egyptian and Near Eastern Civilizations
  - Arabic
  - Hebrew
  - Persian
  - Turkish
- Philosophy
- Physics
- Political Economy of Industrial Societies
  - European Studies
- Religious Studies
- Rhetoric
- Scandinavian
- Slavic Languages and Literatures
  - Russian Language
  - Russian Literature
  - Slavic Language and Literature

Trivial Pursuit
No. 30

What trees on campus attended a famous event before traveling to Berkeley?
(Answer on page 457.)

Physics professor Marvin Cohen holds a model of carbon atoms depicting a structure that through the selective arrangement of carbon atoms will lead to new possibilities in materials.
South and Southeast Asian Studies
South Asian Civilization
South Asian Archaeology

Spanish and Portuguese
Spanish Language and Literatures
Luso-Brazilian Language and Literatures

Undergraduate and Interdisciplinary Studies
Creative Writing
Lesbian, Gay, Bisexual, and Transgender Studies
Religious Studies

Women's Studies
Students should consult the department or group in charge of the minor for additional requirements and specific information regarding the minor program in which they are interested. Admission to the minor and certification of completion of the minor are determined by the department or group in charge of the program. When a student completes a minor program, the department or group in charge will notify the Office of the Registrar, so that the completion may be noted on the student’s transcript.

Additional minor programs are offered by other schools and colleges on campus. Consult their listings in this catalog for more information.

Division of Undergraduate and Interdisciplinary Studies
The Division of Undergraduate and Interdisciplinary Studies (UGIS) is located in 301 Campbell Hall (642-0108). The mission of the division is to develop and administer innovative and interdisciplinary courses and programs in the College of Letters and Science that do not belong to a single department. At present the division administers the field major in interdisciplinary studies, the individual major, and the group majors in American studies, cognitive science, environmental sciences, mass communications, and religious studies. Minor programs are offered in creative writing; lesbian, gay, bisexual, and transgender studies (LGBT); and religious studies. Approval is pending for a minor in peace and conflict studies. UGIS also supports the following majors and minors in international and area studies (101 Stephens Hall, 642-4466): Asian studies, development studies, European studies, international and area studies, Latin American studies, Middle Eastern studies, peace and conflict studies, and political economy of industrial societies (PEIS).

The College Writing Programs (216 Dwinelle Annex, 642-5570), designed to help undergraduates establish fluency and control over their reading and writing skills, are also part of the Division of Undergraduate and Interdisciplinary Studies.

The Freshman Seminar Program is also housed in the division. Seminars are created and taught by faculty members from nearly every campus department. The UGIS office distributes descriptions of these special course offerings to freshmen in time for Tele-BEARS registration each semester.

The division also sponsors the Western and world civilization course series (UGIS 44A-44B-44C, and 55A-55B, respectively), and an undergraduate colloquium that offers lower division students an introduction to the ideas and issues facing different academic disciplines from across the campus (UGIS 79).

The UC Berkeley-Washington Program, also administered by UGIS, allows undergraduates to spend a semester in Washington, D.C., combining course work with internships.

The Undergraduate Research Apprentice Program, administered through this division, is designed to provide highly motivated undergraduates with opportunities to work closely with senior faculty on research projects. Students selected as research apprentices may enroll in the program for 1-4 units through UGIS 192.

The Office of Academic Scholarships and Awards coordinates applications for scholarships and awards based on academic achievement and social or political contribution. Campus committees for the Rhodes, Marshall, Truman, and several other distinguished scholarships are housed here. Staff work to identify talented undergraduates and assist them in the application process.

Organizational Units
African American Studies
American Studies
Ancient History and Mediterranean Archaeology
Anthropology
Art
Practice of Art
History of Art
Asian American Studies
Astronomy
Biostatistics
Buddhist Studies
Celtic Studies
Chemistry
Chicano Studies
Classics
Teaching and research in the College of Natural Resources (CNR) integrate the natural and social sciences to address ecological problems in urban and rural landscapes, agriculture, rangelands, forests, wetlands, and watersheds. The goals of the college are to increase knowledge and understanding of ecosystems, promote sustainable use of natural resources, and provide the foundations of sustainable and equitable environmental management.

The College of Natural Resources has intellectual roots in two former campus units—the College of Agricultural Sciences and the School of Forestry and Conservation—which were combined in 1974 to provide a broad interdisciplinary approach to natural resource problems. In 1993 the college was reorganized again, paring eight departments to four in order to better integrate natural and social sciences and to focus on undergraduate teaching. Undergraduate and graduate programs are available in four departments: Agricultural and Resource Economics; the newly formed Environmental Science, Policy, and Management (ESPM); Nutritional Sciences; and Plant and Microbial Biology.

- The Department of Agricultural and Resource Economics emphasizes the social science of natural resources, especially aspects of economic and political institutions and cultural values that affect the development, management, and conservation of natural resources.
- The Department of Environmental Science, Policy, and Management coordinates and strengthens CNR’s interdisciplinary approaches to critical environmental problems. Its faculty is drawn from former departments of Conservation and Resource Studies, Entomology, Forestry and Resource Management, Plant Pathology, and Soil Science.
- The Department of Nutritional Science provides basic study of nutrition and food science and a professionally accredited undergraduate program in clinical dietetics.
• The Department of Plant and Microbial Biology has a strong focus on basic plant biology from the molecular to the organismal levels, with a direct connection to plant biotechnology.

Undergraduate Programs

Undergraduate programs in the college fall into three categories. Some are prescribed professional programs designed for students with interests in specific professions, such as forestry and nutrition. Some provide a foundation in sciences that prepares students for graduate and professional programs in biology, health sciences, or economics. Most are integrative programs that emphasize flexible, interdisciplinary approaches and prepare students for employment or graduate study in areas such as land management, law, public policy, medicine, and environmental planning.

The Department of Agricultural and Resource Economics. The Department of Agricultural and Resource Economics offers an undergraduate major in environmental economics and policy. The core of the program provides a fundamental education in economics and statistics, with a focus in mathematics. In the major, students integrate the rationality of economics with an understanding of the way natural resource systems work. They develop a sense of how the choices people make affect the environment, of the conflict between economic development and environmental quality, and of how the conflict can be resolved. Students are encouraged to use conditions in California as a learning tool.

The Department of Environmental Science, Policy, and Management. The Department of Environmental Science, Policy, and Management (ESPM) offers coordinated, interdisciplinary learning that addresses environmental problems. The current majors are conservation and resource studies, entomology, forestry, resource management, and soil environment. The department is restructuring some of the current majors and developing new undergraduate majors. Further information can be obtained from the Undergraduate Student Service Office in 260 Mulford Hall.

Conservation and resource studies is designed for students interested in the interaction between issues of sustainable resources, population, technology, economics, cultural values, and societal institutions. The program emphasizes a social science foundation in the lower division years; in their junior and senior years, students create, in conjunction with faculty, and upper division plan which defines their course work for the remainder of their undergraduate study. The program is ideal for highly motivated students who have strong ideas about where they want to make an impact.

The current entomology major provides training for research, teaching, and public service in the many commercial fields where knowledge of entomology and parasitology is applied.

The current major in forestry is designed to prepare students to manage forests and wildlands to produce wood, water, forage, wildlife, recreational opportunities, and other environmental benefits. Graduates are employed by various international, federal, state, local, and private agencies and organizations.

The major in resource management incorporates sociology, diverse other social sciences, and public policy into a strong science curriculum. The interdisciplinary major trains students to make decisions about the management of ecosystems in the face of changing demographics and societal values. Undergraduates are required to take a summer field program in which they spend eight weeks in CNR's "summer camp" analyzing an ecosystem and its historic and current use, making decisions about its management, and creating a workable management plan.

The major in soil environment encourages students to use creativity in constructing a course program that combines soil science, cognate areas, and elective courses to qualify for graduate studies or employment in agriculture, soil and water management, environmental protection, soil survey, consulting, etc. Students in the major study soils, plants, and their interrelationships that support all terrestrial life.

The Department of Nutritional Sciences. CNR's Department of Nutritional Sciences offers a major in nutritional sciences that applies biology and chemistry to everyday issues regarding food and health, from improving athletic performance to feeding disadvantaged populations. The major offers a strong foundation in natural sciences: biochemistry, microbiology, and physiology. It also explores the cultural and societal forces affecting nutrition—the reasons behind an individual's choices of diet. Undergraduate study includes practical background in principles of education, business administration, and economics. The major has two tracks: undergraduates choosing the Physiology and Metabolism track usually prepare for careers in medicine, research, or government; Dietetics, a professional track, prepares student for careers as dietitians.

The Department of Plant and Microbial Biology. The Department of Plant and Microbial Biology offers a major in genetics and plant biology that combines traditional plant sciences—physiology, biology, and anatomy—with newer biological disciplines such as genetics, molecular biology, and biochemistry. The major is split into two tracks: Plant Biology and Plant Genetics. The Plant Biology track concentrates on the spectrum of cellular and organismal aspects of plants; Plant Genetics focuses on cellular development, molecular genetics, and agricultural biotechnology. Both recognize the role plants play in the global environment.
Major Requirements. Detailed course requirements for each major, along with college requirements for the B.S. degree, are listed in the Announcement of the College of Natural Resources, available from the Office of Instruction and Student Affairs, University of California, Berkeley; 137 Giannini Hall #3100, Berkeley, CA 94720-3100. For further information, call the Office of Instruction and Student Affairs at 642-0542.

Minor Programs. The college offers minors in conservation and resource studies, forestry, environmental economics and policy, and nutritional sciences. For information, please contact the appropriate departmental office or the Office of Instruction and Student Affairs.

Limited Status. Qualifications for limited status include (1) a previous bachelor’s degree or substantial previous college work, and (2) a specific well-defined academic goal for which additional undergraduate work in natural resources is necessary. Students must also have a GPA of 3.0 or better. For further qualifications and information, contact the Office of Instruction and Student Affairs at 642-0542 in 137 Giannini Hall.

Undergraduate Advisers. Undergraduate advisers in each major serve as a crucial link between students and the college. Advisers are available throughout the year to discuss major requirements and to assist students in planning a program best suited to their individual needs and interests. All students are required to see their advisers—at least once a semester in connection with each registration period—for advice in planning their academic programs.

Tele-BEARS Registration. Students must have an adviser’s approval before filing their Tele-BEARS registration lists. The minimum course load for students is 13 units. Exceptions require either (1) an employment verification form on file, (2) a part-time status form on file, or (3) authorization from the Dean’s Office. For further information, contact the Dean’s Office, Office of Instruction and Student Affairs, 642-0542.

Graduate Programs
Academic and professional graduate degree programs are available in agricultural and environmental chemistry; agricultural and resource economics; comparative biochemistry; environmental science, policy, and management; nutrition; plant and microbial biology; and range management. In addition, an ad hoc interdisciplinary doctoral program is offered.

Inquiries regarding details of the various graduate programs may be directed to the appropriate graduate adviser in the chosen field.

Organizational Units
Agricultural and Resource Economics
Department Office: 207 Giannini Hall, 642-3345
Chair: David Zilberman, Ph.D.

Environmental Science, Policy, and Management
Department Office: 145 Giannini Hall, 643-8074
Chair: Joe R. McBride, Ph.D.

Nutritional Sciences
Department Office: 119 Morgan Hall, 642-6490
Chair: Barry Shane, Ph.D.
School of Optometry

Office of the Dean (642-3414) and Admissions (642-9537): 351 Minor Hall
http://spectacle.berkeley.edu

Dean:
Anthony J. Adams, O.D., Ph.D.
Associate Dean for Academic Affairs:
Gunilla Haegerstrom-Portnoy, O.D., Ph.D.
Associate Dean for Clinical Academic Affairs:
Edward J. Revelli, O.D.
Associate Dean for Student Affairs:
Michael G. Harris, O.D., J.D., M.S.
Director of Residency Programs:
Deborah Orel-Bixler, O.D., Ph.D.

The School of Optometry provides professional training in the art and science of vision care. Drawing upon the principles of anatomy, optics, physiology, and psychology, the four-year professional program leads to the degree of Doctor of Optometry, which qualifies one to take state board examinations.

Doctors of Optometry are health care professionals. Optometry is a primary health care profession that encompasses the prevention and remediation of disorders of the vision system through examination, diagnosis, treatment, and/or management of visual efficiency, eye health, and related systemic manifestations. Optometry graduates are able to diagnose patients with ocular disease or systemic diseases with ocular manifestations. Recent changes in optometry laws across the United States have expanded the scope of optometric practice, giving practitioners responsibility for nonsurgical pharmaceutical treatment of eye disorders and diseases.

Doctors of Optometry are educated in the sciences of anatomy, zoology, chemistry, physics, mathematics, neurology, bacteriology, microbiology, disease processes and detection, pharmacology, behavioral science, social science, public health, and many other related fields. The school provides four years of comprehensive training in vision care aimed at training primary eye care practitioners. The first year emphasizes advanced study of sciences which form the background of optometry, such as ocular anatomy, medical physiology and biochemistry, ocular pathology, physiology, microbiology and virology, neuroanatomy, the psychology of vision, vision science, geometric optics, ophthalmic optics, pharmacology, and theoretical and practical optics. The second and third years are devoted to the science of optometry and the acquisition of skills in examination procedures. Although clinical participation is involved in all four years, active responsibility for patient care begins in the summer preceding the third year. The fourth year is devoted to primary care practice of optometry and the detailed study of specialized areas, including contact lenses, binocular and infant vision, vision functions, ocular health, aniseikonia, vision of the elderly, and low vision.

Optometry offers a wide variety of interesting, challenging, and rewarding careers in private practice, in hospitals and other health organizations, and in public service. The education acquired at the School of Optometry provides today's Doctors of Optometry with the knowledge and skill necessary to meet the challenges of providing vision care.

For further information about the school's programs, please consult the Announcement of the School of Optometry, available from the Admissions Office, School of Optometry, University of California, Berkeley, 390 Minor Hall #2020, Berkeley, CA 94720-2020, or send e-mail to ucbso@spectacle.berkeley.edu.

Optometric Residency Program

A one-year Optometric Residency program is available for graduate optometrists who want to expand their skills in one or more clinical areas and/or seek training in specialty areas. The areas of study include binocular/pediatric vision, primary care optometry, low vision, contact lenses, and ocular health. Special combined or individual programs may be considered.

For further information about the Optometric Residency program, please contact the Graduate Student Affairs Officer, 488A Minor Hall #2020, Berkeley, CA 94720-2020 or send e-mail to optres@spectacle.berkeley.edu.
Vision Science

The graduate program in vision science leads to the M.S. and Ph.D. degrees. The program is administered by the Group in Vision Science, representing faculty from the School of Optometry and the Departments of Psychology, Computer Science, and Bioengineering, among others. The faculty is distinguished in their accomplishments and diverse in their areas of expertise.

The graduate program provides training in a wide variety of topics pertaining to biological vision. These include the optics of the eye, molecular and cell biology of the eye, anatomy and neurophysiology of the eye and visual pathways. The graduate program is designed to prepare students for a career in teaching and research in the science of vision. Research facilities available to graduate students in vision science are unexcelled anywhere in the world.

Students interested in this graduate program should become familiar with the regulations of the Graduate Division and should contact the graduate student affairs officer or the chair of the Group in Vision Science as early as possible. Admission to this program requires a bachelor's degree in a relevant discipline (such as biology, computer science, engineering, or psychology) or a doctoral degree in medicine or optometry.

An undergraduate program in vision science leads to the B.S. degree. The primary purpose of this program is to prepare students for the graduate program in vision science rather than the practice of optometry.

For further details about the requirements for the vision science programs, please contact the Graduate Student Affairs Officer, Group in Vision Science, University of California, Berkeley, 488A Minor Hall #2020, Berkeley, CA 94720-2020, or send e-mail to visci@spectacle.berkeley.edu.

School of Public Health

Office of the Dean and Student Services and Admissions:
19 Earl Warren Hall, 642-6531
Dean:
Patricia A. Buffler, M.P.H., Ph.D.
Associate Deans:
C. Jean Morton, M.S.W., M.P.H.
Richard Stephens, Ph.D.

The mission of the School of Public Health (SPH) is to develop and apply knowledge from multiple disciplines for the promotion and protection of the health of the human population, giving due consideration to principles of human rights and cultural perspectives that abound in our multicultural country and world. The school carries out this mission with programs of teaching, research, and service. These programs, grounded in an understanding of the theory and mechanisms of the basic sciences, are integrated through a focus on communities that reach from the neighborhoods surrounding the campus to international settings.

Promotion and protection of the health of human populations require a scientific understanding of epidemiology, biostatistics, and the biological, physical, environmental, social, behavioral, informational, and administrative and policy sciences. In the School of Public Health, these and other disciplines focus on health problems of particular populations, selected diseases or disabilities, and issues associated with the application of resources to public health systems. SPH faculty, support resources, and curricula focus on both the fundamental disciplines and their applications to particular problems. Within the University and wider community, faculty strive to advance the understanding of the fundamental disciplines, apply them to problems faced by human populations, and provide the interdisciplinary context in which future public health practitioners and scholars may develop needed skills and capacities.

The program of study leading to the professional M.P.H. degree is based on a series of foundation courses. In addition, M.P.H. students concentrate in one of the following areas: biostatistics, environmental health sciences, epidemiology, infectious diseases, community health education, maternal and child health, health policy and administration, and public health nutrition. The Dr.P.H. curriculum is based on a comprehensive body of knowledge in the field of public health and its related disciplines, and the investigation of significant problems in public health practice.

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

- Biostatistics—M.A., Ph.D.
- Environmental Health Sciences—M.S., M.S./Ph.D., Ph.D.
- Epidemiology—M.S., Ph.D.
- Health Services and Policy Analysis—Ph.D.
- Infectious Disease and Immunity—Ph.D.
- Microbiology—Ph.D.
- Health and Medical Sciences—M.S.
- Genetic Counseling and UCB/UCSF Joint Medical Program—M.S.

Applications for admission to the School of Public Health are generally accepted for the fall semester only, because of the sequencing of courses. Both the School of Public Health and the Graduate Division require a separate set of application material. All applicants should return all their application documents (both School of Public Health and Graduate Division) in one packet to Student Services and Admissions, School of Public Health. The deadline is January 10. Graduate Fellowship applicants must submit all application materials by December 15.
For further information about the School of Public Health, visit the school’s home page at http://garnet.berkeley.edu/~sphp or visit or write the School of Public Health, University of California, Berkeley, 19 Earl Warren Hall #7360, Berkeley, CA 94720-7360.

**Graduate School of Public Policy**

Office: 2607 Hearst Avenue, 642-4670
Dean:
Eugene Smolensky, Ph.D.

For many decades now, the problems society faces have steadily grown in number, variety, and complexity. Most of these problems come for resolution, sooner or later, to the doorstep of government. In response, public officials are increasingly involved with devising solutions to social problems and improving governmental services. They wrestle with such difficult questions as political conflict, policy choice, the implementation of policy, bureaucratic behavior, program effectiveness, and the equity and efficiency with which public resources are distributed. Heightened concern with this broad policy terrain is also evident within the private sector, which is developing greater capability in the analysis of public policy. As a consequence of these trends, the need for well-trained analysts and managers in the policy field remains strong.

The Graduate School of Public Policy prepares students to join the ranks of policy analysts in both the public and private sectors. The strong first-year core curriculum is enhanced by the diversity offered in the second year. The school’s program provides students with the benefits of and access to the resources of the entire Berkeley campus. Second-year students can take their elective courses from the full array of campus offerings.

**Undergraduate Courses**

The undergraduate courses in public policy deal with the substance of public policy, how it is made, and how its effects can be gauged, and what the purposes of policy should be. The courses consider both the policy process and particular policy issues. By examining different policy problems in their political and social contexts, students should gain a greater sensitivity to the forces which shape and carry out public policies and to the impact of social, political, economic, and legal power.

Courses are designed for students in diverse disciplines and professional schools. There are no prerequisites for enrollment in the courses unless specifically noted otherwise in the course descriptions. The training provided by the courses is useful to those interested in combining the substantive perspectives of the social sciences with the immediacy of contemporary problems; to those considering professional study; and to the informed and politically aware citizen.

**Minor Program.** The undergraduate minor in public policy introduces students from other departments and colleges to the field and practice of policy analysis. The minimum requirements are five courses in public policy, at least three of which must be upper division. All classes must be taken at the School of Public Policy. PP 101 is required of all students in the minor. Students must achieve at least a C average (2.0) in the five courses. When students complete the minor, the school notifies the Office of the Registrar. Completion of the minor will be noted on the students’ transcripts of Berkeley work.

**Graduate Courses**

Through an examination of domestic and some international policy areas, graduate courses enable students to conduct systematic work in the design and assessment of public policies. Among the skills emphasized are those facilitating the application of political, organizational, economic, quantitative, and legal analysis to the full range of the policy process—from policy initiation through policy adoption, implementation, and evaluation. By developing these skills, students from the professional schools and academic disciplines should find their strengthened analytical capabilities of direct use when applied to their own field of concentration.

**Master's Degree in Public Policy**

The professional degree, the Master of Public Policy, is designed to provide students with the knowledge, analytical skills, and sensitivities needed to conduct public policy studies. Students from diverse disciplinary backgrounds are accepted into this program. Those completing the master’s program are qualified to take on a variety of significant policy roles in the U.S. and abroad. They work within the public sector at all government levels, in nonprofit organizations, and in private consulting firms. Examples of jobs include staff analyst in a regulatory agency or planning office, special assistant to a senior executive, legislative aide, project officer or program manager in an operating agency or staff member in a nonprofit management consulting or policy research firm.

The two-year master’s degree program consists of a required first-year core curriculum, a summer internship, and a second year devoted mostly to elective courses and a policy study of the student’s choice. The core curriculum includes courses in political and organizational analysis, economic analysis, quantitative techniques, legal analysis, and a workshop where students perform policy studies on selected issues.
Coordinated Degree Programs with Other Berkeley Colleges and Schools

The M.P.P. may be earned in combination with an advanced degree from the following Berkeley schools and colleges under a coordinated program:

- M.P.P./J.D. with the Boalt School of Law
- M.P.P./M.P.H. in health policy and administration with the School of Public Health
- M.P.P./M.A. in international and area studies with the College of Letters and Science
- M.P.P./M.S. with the College of Engineering

Ph.D. in Public Policy

The Ph.D. program prepares students for careers in public and community service. The complexities and vicissitudes of modern society create enormous problems, such as economic dependency, physical and mental illness, child abuse and neglect, marital disruption, homelessness, and substance abuse. The field of social welfare and the profession of social work help people (most of whom are disadvantaged and from minority backgrounds) who experience these problems. Professional education focuses on the institutions, organizations, programs and policies, and methods of practice that address these problems. In short, the School of Social Welfare is for people who care about their fellow men and women and the communities in which they live. Graduates of the school can be found in both public and private social agencies, working with individuals, families, groups, organizations, and communities, and contributing in a variety of ways to the formulation and implementation of solutions to social problems.

The school offers the following programs:

- A program of study leading to the Ph.D. in Social Welfare, which prepares students for careers in teaching, research, policy development and analysis, and administration in the field of social welfare and the profession of social work. It is open to applicants who hold a master's degree in social work or social welfare or have comparable preparation in a closely related field and who show evidence of intellectual and other qualifications essential to successful doctoral study.

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

School of Social Welfare

Office: 120 Haviland Hall, 642-4341
Dean:
James Midgley, Ph.D.

Graduate Program

The School of Social Welfare is a graduate professional school dedicated to educating men and women for careers in public and community service. The complexities and vicissitudes of modern society create enormous problems, such as economic dependency, physical and mental illness, child abuse and neglect, marital disruption, homelessness, and substance abuse. The field of social welfare and the profession of social work help people (most of whom are disadvantaged and from minority backgrounds) who experience these problems. Professional education focuses on the institutions, organizations, programs and policies, and methods of practice that address these problems. In short, the School of Social Welfare is for people who care about their fellow men and women and the communities in which they live. Graduates of the school can be found in both public and private social agencies, working with individuals, families, groups, organizations, and communities, and contributing in a variety of ways to the formulation and implementation of solutions to social problems.

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Further Information

Brochures and information on admissions procedures and student financial assistance are available from the Graduate School of Public Policy, University of California, Berkeley, 2607 Hearst Avenue #7320, Berkeley, CA 94720-7320.

Trivial Pursuit

No. 35

Barrow Lane is the little street that runs behind Sproul Hall. How does the name relate to Barrows Hall, which the lane passes?

(Answer on page 458.)
Moses Hall and Stephens Hall face each other across a courtyard and have similar architectural styles, but what else did they once have in common? (Answer on page 458.)

A two-year program of studies for the Master of Social Welfare degree in preparation for advanced practice in social work. Classroom and field courses are designed to teach professionals to use tested knowledge and skill and research methods in their practice. Applicants for admission must have strong academic preparation in the liberal arts and sciences, including course work in the social and behavioral sciences. In addition, introductory course work in social welfare and social work, research methods, and quantitative reasoning is given special attention. Knowledge of the social welfare field and professional commitment to social work are also evaluated. Such knowledge and commitment are usually demonstrated in part by successful paid employment related to social welfare. Paid experience, however, is not a requirement for admission; those who demonstrate sufficient knowledge and commitment through voluntary experience may also qualify.

The school sponsors several special programs: the M.S.W./M.P.H. dual degree program, the social welfare/law concurrent degree program, the international and area studies/social welfare concurrent degree program, the pupil personnel services credential program, the Title IV-E Child Welfare Training Program, and the American Indian Graduate Program.

Applications for admission to any of these programs should be submitted as early as possible beginning in September and no later than February 10 for admission in the following academic year. Admission to the school is contingent on admission to graduate standing; for details see the booklet Admission to Graduate Study.

The M.S.W. program is accredited by the Council on Social Work Education.

For further information, consult the Announcement of the School of Social Welfare, available from the School Office, 120 Haviland Hall or visit our Web site at http://hav54.socwel.berkeley.edu.

Undergraduate Group Major, Letters and Science

The Department of Social Welfare administers an undergraduate group major in social welfare in the College of Letters and Science leading to the degree of Bachelor of Arts. For major requirements, see the Social Welfare section of this catalog.
Interdisciplinary Programs

Interdisciplinary Education

In some sense, all knowledge is interdisciplinary. Ideas, approaches, and problems do not cluster themselves "naturally" into disciplines. The organization of knowledge into specialized academic departments is a result of the complicated historical development of the modern university. Therefore, students will find that topics and methodologies are often shared by many disciplines and departments.

When we refer to interdisciplinary education we generally mean one of four approaches:

1. the attempt to unify and synthesize ideas, as in a course on Topics in Western Civilization;
2. the attempt to broaden traditional disciplines, as in the development of subfields such as political economy or social psychology;
3. the study of new fields that are emerging outside departmental boundaries, such as cognitive science or mass communications;
4. the attempt to solve problems or address specific issues by bringing together work from a number of disciplines and fields.

Students at Berkeley can pursue an interdisciplinary education formally by deciding to major in one of the interdisciplinary group or field majors, or informally by including special interdisciplinary courses in their curriculum or clustering their elective courses with an interdisciplinary focus.

There are rich and varied opportunities for interdisciplinary study at Berkeley. Many colleges and schools have their own interdisciplinary degree programs. Some offer, or collaborate in offering, special interdisciplinary courses in their curriculum or clustering their elective courses with an interdisciplinary focus.

The Division of Undergraduate and Interdisciplinary Studies administers some of the largest interdisciplinary programs serving undergraduates. All of its major programs cut across departmental divisions; many cut across college divisions as well. The field major in interdisciplinary studies allows students to develop their own areas of specialization under faculty supervision. Group majors in UGIS allow undergraduates to earn degrees in American studies, cognitive science, environmental sciences, mass communications, and religious studies. Interdisciplinary minor programs are available in creative writing; lesbian, gay, bisexual, and transgender studies (LGBT); and religious studies.

The division also sponsors interdisciplinary courses of general interest, such as the courses on Western Civilization and World Civilization, and the lower division colloquium (UGIS 79) that introduces undergraduates to the diverse ideas and issues that motivate intellectual life across the campus.

Students should consult the Division of Undergraduate and Interdisciplinary Studies (301 Campbell Hall, 642-0108) for more information.

Special Studies: There are several innovative and interdisciplinary programs of study not within the colleges and schools. Special studies courses provide credits directly applicable to a University degree and are established through interrelationships among colleges, schools, and departments, and, in certain cases, in conjunction with community groups, other UC campuses, and other universities. The following are designated as Special Studies programs (see individual listings for details): Energy and Resources Group; International Education; and the Military Officers' Education Program (ROTC), which includes Military Affairs courses and programs in Aerospace Studies (Air Force ROTC), Military Science (Army ROTC), and Naval Science (Navy ROTC).

Clustering Electives with an Interdisciplinary Focus

Students may organize their interests in interdisciplinary clusters by choosing elective courses from a number of departments in Letters and Science and in professional schools and colleges. For example, a student interested in literature will find courses in all the foreign language departments, in Ethnic Studies, in Rhetoric, in history courses, in social theory courses, etc., as well as in the Departments of English and Comparative Literature. Economic issues are addressed in courses offered by many Letters and Science departments including Political Science, Sociology, African American Studies, History, Geography, etc., and in courses offered by professional schools and colleges (Business, Public Policy, City Planning, Natural Resources) as well as in the Department of Economics. Students interested in religion will find courses in South and Southeast Asian Studies, History, Middle Eastern Studies, etc., as well as in Religious Studies. In addition, a number of departments offer cross-listed courses which use interdisciplinary methods. These are listed in departmental offerings. (You may consult your college adviser for help in planning your course of study to include an interdisciplinary focus.)
## Environmental Studies at Berkeley

### Basic Environmental Science

<table>
<thead>
<tr>
<th>Degree Program or Emphasis</th>
<th>Department/Unit</th>
<th>Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Environmental Biology</td>
<td>College of Natural Resources</td>
<td>UG</td>
</tr>
<tr>
<td>Environmental Science, Policy, and Management</td>
<td>Environmental Science, Policy, and Management</td>
<td>G</td>
</tr>
<tr>
<td>Environmental Sciences (proposed)</td>
<td></td>
<td>UG</td>
</tr>
<tr>
<td>Geography</td>
<td>Geography</td>
<td>UG, G</td>
</tr>
<tr>
<td>Earth Science</td>
<td>Geology and Geophysics</td>
<td>UG</td>
</tr>
<tr>
<td>Integrative Biology—Environmental Biology</td>
<td>Integrative Biology</td>
<td>UG, G</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Interdepartmental Graduate Groups</td>
<td>G</td>
</tr>
<tr>
<td>Agriculture and Environmental Chemistry</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Nutrition (nutrition and metabolism)</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Nutrition and Food Science</td>
<td>Nutritional Sciences</td>
<td>UG</td>
</tr>
<tr>
<td>Nutrition</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Genetics and Plant Biology</td>
<td>Plant and Microbial Biology</td>
<td>UG</td>
</tr>
<tr>
<td>Plant Biology</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Environmental Sciences</td>
<td>Undergraduate and Interdisciplinary Studies</td>
<td>UG</td>
</tr>
</tbody>
</table>

### Applied Science and Environmental Engineering

<table>
<thead>
<tr>
<th>Degree Program or Emphasis</th>
<th>Department/Unit</th>
<th>Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Engineering</td>
<td>Civil and Environmental Engineering</td>
<td>UG, G</td>
</tr>
<tr>
<td>Geotechnical Engineering</td>
<td></td>
<td>UG, G</td>
</tr>
<tr>
<td>Environmental Engineering Science</td>
<td>Engineering Science</td>
<td>UG</td>
</tr>
<tr>
<td>Environmental Technology</td>
<td>Chemical Engineering</td>
<td>UG</td>
</tr>
<tr>
<td>Earth Resources Engineering</td>
<td>Materials Science and Mineral Engineering</td>
<td>UG</td>
</tr>
<tr>
<td>Engineering Geoscience</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Environmental Engineering Science</td>
<td>Mechanical Engineering</td>
<td>UG, G</td>
</tr>
<tr>
<td>Nutrition and Clinical Diabetics</td>
<td>Nutritional Sciences</td>
<td>UG</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>School of Public Health</td>
<td>G</td>
</tr>
<tr>
<td>Biostatistics</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Environmental Health Sciences</td>
<td></td>
<td>G</td>
</tr>
</tbody>
</table>

### Environmental Management, Planning, Policy and Design

<table>
<thead>
<tr>
<th>Degree Program or Emphasis</th>
<th>Department/Unit</th>
<th>Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Resource Economics</td>
<td>Agriculture and Resource Economics</td>
<td>G</td>
</tr>
<tr>
<td>Environmental Economics and Policy</td>
<td></td>
<td>UG</td>
</tr>
<tr>
<td>Architecture (specific courses)</td>
<td>Architecture</td>
<td>UG, G</td>
</tr>
<tr>
<td>City and Regional Planning (specific courses)</td>
<td>City and Regional Planning</td>
<td>G</td>
</tr>
<tr>
<td>Landscape Architecture</td>
<td>Landscape Architecture and Environmental Planning</td>
<td>UG, G</td>
</tr>
<tr>
<td>Environmental Planning</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Urban Design (concurrent program)</td>
<td>City and Regional Planning and</td>
<td>G</td>
</tr>
<tr>
<td>Environmental Science, Policy, and Management</td>
<td>Landscape Architecture and Environmental Planning</td>
<td></td>
</tr>
<tr>
<td>Conservation and Resource Studies</td>
<td>Environmental Science, Policy, and Management</td>
<td>UG</td>
</tr>
<tr>
<td>Resource Management (wildlife, soils and watersheds, grasslands and woodlands, and natural resources)</td>
<td></td>
<td>UG</td>
</tr>
<tr>
<td>Forestry</td>
<td></td>
<td>UG, G</td>
</tr>
<tr>
<td>Range Science</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Environmental Science, Policy, and Management</td>
<td>Interdepartmental Graduate Groups</td>
<td>G</td>
</tr>
<tr>
<td>Range Management</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>Political Economy of Industrial Societies (group major)</td>
<td>International and Area Studies</td>
<td>UG</td>
</tr>
<tr>
<td>Law (specific courses)</td>
<td>Law</td>
<td>G</td>
</tr>
</tbody>
</table>

### Integrated Science, Technology, and Policy

<table>
<thead>
<tr>
<th>Degree Program or Emphasis</th>
<th>Department/Unit</th>
<th>Level*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy and Resources Group</td>
<td>Interdepartmental Graduate Groups</td>
<td>G</td>
</tr>
</tbody>
</table>

*In the column below, UG refers to undergraduate and G refers to graduate.*
Environmental Studies at Berkeley

Environmental studies at Berkeley include courses, curricula, research, and public service that cover aspects of sciences and arts, engineering and management, law and policy, planning and design. Several degree-granting programs specifically emphasize aspects of the environment, and hundreds of courses in other departments apply the principles of those disciplines to issues in the environment. By judiciously selecting courses, students can develop curricula that bridge the boundaries among departments and take advantage of the diverse resources from several programs.

The chart on page 112 identifies the principal degree-granting environmental curricula described in more detail under corresponding headings in this catalog. Further detail is available in the announcements of individual colleges and schools.

Individual Majors

Students whose interests lie outside or between the degree programs listed in the chart on page 112 should consider designing individual majors that satisfy their academic goals. For example, students interested in the ways that societal principles and cultures affect the environment might consider individual majors in such departments as Anthropology, History, Legal Studies, Peace and Conflict Studies, Psychology, and Sociology.

Departments with Related Courses

In addition to the degree programs of emphases identified on the chart, each of the following headings in the General Catalog offers several relevant courses.

- Anthropology
- Business Administration
- Chemistry
- City and Regional Planning
- Demography
- Development Studies
- Economics
- Engineering
- Environmental Design
- Interdepartmental Studies
- Molecular and Cell Biology
- Nuclear Engineering
- Physics
- Political Science
- Public Policy
- Social Welfare
- Urban Design

see also University Extension

For a complete listing of courses that focus on environmental matters, see Enviro-Studies: A Guide to Environmental Studies at Berkeley, or The Student’s Guide to Environmental Studies: What the Others Don’t Tell You About Undergraduate Majors at Cal. Both are available at bookstores, through academic advisers, and on the Environmental Council home page at http://www.CNR.berkeley.edu/cecc/. A graduate students’ guide to environmental studies at Berkeley was being prepared when this catalog went to press; check the Web site periodically for up-to-date information about its progress.

International and Area Studies

Berkeley’s international teaching programs and centers for research and outreach are part of our rich multicultural environment. International issues are the focus of six undergraduate and three graduate interdisciplinary majors offered by the International and Area Studies Teaching Programs. Through the undergraduate group majors in Asian studies, development studies, Latin American studies, Middle Eastern studies, peace and conflict studies, and political economy of industrial societies, you can focus your education on a variety of geographical or issue-oriented areas and topics. You can also enjoy the advantages of close relationships with many of the centers of research affiliated with International and Area Studies. These centers sponsor concerts, lectures, special events, conferences, and seminars and assist the teaching programs in bringing internationally renowned scholars and faculty to teach courses in the IAS Teaching Programs as well as departments in the humanities, sciences, and social sciences. In addition, the teaching programs collaborate with the various centers in promoting student internships and research opportunities. For more information about International and Area Studies at Berkeley, contact the IAS Teaching Programs Office, 101 Stephens Hall, 642-4466 or one of the research centers listed to the right.

International and Area Studies Programs

- Center for African Studies: 642-8338
- Center for East Asian Studies: 642-0351
- Institute of East Asian Studies: 642-2009
- Center for Chinese Studies: 643-6321
- Center for Japanese Studies: 642-3156
- Center for Korean Studies: 642-5618
- Center for German and European Studies: 643-5777
- Institute of International Studies: 642-2472
- Berkeley Roundtable on the International Economy (BRIE): 642-3067
- Center for International and Development Economic Research (CIDERE): 642-2474
- Program in Population Research: 642-9800
- Center for Latin American Studies: 642-2088
- Center for Middle Eastern Studies: 642-8208
- Center for Slavic and East European Studies: 642-3230
- Center for South Asian Studies: 642-3808
- Center for Southeast Asian Studies: 642-3809
- Center for Western European Studies: 642-9314
- Catalonian Studies Program: 643-7856
- Finnish Studies Program: 643-0868
- French Cultural Studies Program: 643-5799
- Iberian Studies Program: 642-5326
- Italian Research and Study Program: 643-1994
- Portuguese Studies Program: 643-0980
- Berkeley Program in Soviet and Post Soviet Studies: 643-6737
- Office for Resources in International and Area Studies: 643-0868
The Department of Dramatic Art and its dance component are now part of the new Center for Theater Arts. Dancers rehearse in a magnificent space, formerly a Unitarian church.
Trivial Pursuit
No. 39
Which of the following was not discovered or originated at Berkeley:
(a) Plutonium
(b) breast cancer gene
(c) fruit cocktail
(d) lasers
(Answer on page 458.)

Key to Symbols
The following symbols are used in the departmental faculty lists in the “Courses and Curricula” section that follows:
*Professor in the Graduate School: An honorific title to recognize emeritus faculty who continue to be active in the graduate teaching and research programs of the department
†Recipient of Distinguished Teaching Award
“Above the Line” and “Below the Line”
The faculty lists of many departments are divided by a short line that separates full members of a department from members affiliated with the department by a “courtesy appointment.” Faculty members whose names appear above the line are full members of the department. Faculty members whose names appear below the line are affiliated with the department but are not members of it.

Organization of “Courses and Curricula” Section
In the following section of the catalog, departments are listed alphabetically regardless of the college or school to which they belong. Interdepartmental groups, special studies, special projects, and other nondepartmental units are also listed alphabetically wherever possible. Interdepartmental Studies courses are reproduced together under that heading as well as in each sponsoring department. If you are unable to locate the department or program which interests you, consult the Index.

The colleges and schools are introduced in the “Colleges, Schools, and Interdisciplinary Programs” section, beginning on page 87. The introductions discuss the scope and educational goals of each college and school and list the departments and organizational units within each.

Course Listings
Note: Not all of the courses listed in the following section are offered every year. For current information, see the Schedule of Classes or consult with departmental advisers.

You should carefully note prerequisites for courses, although they are sometimes waived at the discretion of the instructor.

Courses with double numbers (for example, English 1A-1B) are two-semester sequences that usually begin in the fall semester. Except as noted, each course in a sequence is normally prerequisite to the one following, and you may normally receive credit for completing the first half of a sequence. Course numbers preceded by the letter H are special honors courses that may be subject to restrictions imposed by the department.

The number in parentheses following the course title indicates the credit value; the abbreviation in parentheses indicates the semester in which the course is offered: (F) fall, (SP) spring. Since this is a two-year catalog and course offerings are not yet known for the 1998-99 academic year, these notations apply to 1997-98 only. Summer Sessions courses are listed separately in the Summer Sessions Catalog except for a few courses that are part of a department’s degree requirements.

Course numbers are assigned as follows:
1-99
Lower division courses, including courses designated by a letter. Open to freshmen and sophomores; not acceptable for upper division credit.

100-196
Upper division courses. You must ordinarily have completed at least one lower division course in the given subject or two years of college work.

98, 99, 197, 198, 199
Special Studies courses. (See limitations listed below.) Effective fall 1983, you may use no more than 16 semester units of courses numbered 98, 99, 197, 198, and 199 to meet requirements for the bachelor’s degree. Exceptions to this rule may be granted by the dean of your college or school.

197
Field study (upper division). Courses with this number are restricted to passed/not passed grading. To take them you must have completed 60 units of undergraduate study and be in good academic standing (2.00 grade-point average or better). Exceptions to these rules may be granted by the dean of your college or school.
These courses allow you to pursue study of special topics, in groups or individually, under the direction of a faculty member. You may aggregate no more than 4 units of credit for independent studies or group studies in a single semester.

Directed group study by lower division students. Each section of a 98 course must receive approval by the chair of the department, based upon a written proposal by the instructor who is to supervise the course. Only a grade of passed/not passed is to be assigned. The dean of your college or school, on advice of the instructor, may authorize exceptions to the grading limitation.

Supervised independent study by academically superior, lower division students. You must have a 3.3 GPA and prior consent of the instructor who is to supervise the study, and you must submit a written proposal to the chair of the department for approval. Only a grade of passed/not passed is to be assigned. The dean of your college or school, on advice of the instructor, may authorize exceptions to the grading limitation.

Directed group study (upper division). Each section of a 198 course must receive approval by the chair of the department, based upon a written proposal by the instructor who is to supervise the course. To enroll in 198 courses, you must have completed at least 60 units of undergraduate study and be in good academic standing (2.00 grade-point average or better). Only a grade of passed/not passed will be assigned. The dean of your college or school, on advice of the instructor, may authorize exceptions to the above limitations.

Supervised independent study (upper division). You must have prior approval of your major adviser, the instructor who is to supervise the study, and the chair of the department. Approval must be based on a written proposal that you submit to the chair. The instructor must indicate consent in writing. To enroll in 199 courses, you must have completed at least 60 units of undergraduate study and must be in good academic standing (2.00 grade-point average or better). Only a grade of passed/not passed will be assigned. The dean of your college or school, on advice of the instructor, may authorize exceptions to the above limitations.

Graduate courses. Adequate preparation, subject to the instructor's approval, is normally 12 upper division units of work basic to the subject matter of the course.

Professional courses for teachers or prospective teachers.

Professional courses which, like teaching courses, are acceptable toward academic degrees only within the limitations prescribed by the various colleges or schools or the Graduate Division.

Special study for graduate students in preparation for the master's examination.

Special study for graduate students in preparation for the doctoral qualifying examination.

Experimental Courses

The University offers a number of experimental courses. Information about these courses is contained under (1) Self-Paced Courses, discussed in the Appendix; and (2) some of the Interdepartmental Studies courses, listed in the Interdepartmental Studies section of this catalog as well as in each sponsoring department.

Use of Animals in the Instructional Program

Certain courses offered at the University of California, Berkeley require the use of animals, living or preserved, vertebrate or invertebrate, and/or their preserved and/or extracted parts, in the course of instruction. Such animal use is determined judiciously by the instructors of the courses to be necessary and appropriate to the intellectual and technical education of students. All use of animals in teaching and research is approved by the campus Animal Care and Use Committee. It is the responsibility of students to ascertain course requirements before enrollment, and the responsibility of instructors to provide that information clearly and unequivocally. Should the students find enrollment in such courses not appropriate to their interests or beliefs, they should see their advisers to recommend alternative courses, or, if appropriate, alternative majors.